AMERICA'S LARGEST TEXTILE MONTHLY

COTTON

Entered as second-class matter at the postoffice, Dalton, Ga., under act of March 3, 1879.

Volumne 87
Number Nine
$1.00 a Year.

JULY, 1923

Published monthly by
W. R. C. Smith Publishing Co.
Dalton, and Atlanta, Ga.

Do You receive this Magazine?

IF you are interested in dyes---either in their purchase or their application---you will enjoy receiving DYESTUFFS each month. You will read, in this magazine, articles on dyeing that are interesting, informative, and authentic. DYESTUFFS publishes its own copy-righted articles and reprints the best of the trade articles.

DYESTUFFS costs you nothing. It is issued free to all who request it. Dyers, chemists, mill superintendents---all read DYESTUFFS. You are overlooking a real source of dye news and dye information if you are not receiving this magazine each month. May we send it---without cost to you?

DYESTUFFS

Published by NATIONAL ANILINE & CHEMICAL COMPANY, Inc., 40 Rector Street, New York.

Table of Contents, Page 47. Buyers' Index, Page 284. Advertisers' Index, Page 296.

How Much Time Have You Spent in Personally Investigating Franklin Process Dyeing

THIS is a rather personal question, we admit, but on the other hand permissible, we feel, because it is more than likely that Franklin dyeing can vitally affect your profits and the salability of your goods.

The Franklin Process involves the dyeing of yarn in the wound form. Before the yarn is dyed it is wound from spools to Franklin Tubes.

Yarn dyed in skein form has to be rewound to spools after dyeing.

Which process of winding is the most economical?

Rewinding from spool to Franklin tube requires far less time and affects a worth while reduction in waste from breakage.

As regards quality, Franklin dyeing, being done in a closed kier under pressure, effects a complete penetration of the yarn. This results in a solidity, evenness and brilliancy which have made Franklin colors easily distinguished and generally demanded by converters.

Do you realize that Franklin dyeing, because it has such an enviable reputation among converters, can be made one of your strongest sales assets?

Why not investigate now?

Don't accept someone else's opinion on the matter. Find out for yourself. Don't be guided by any unfavorable report which you may have heard about Franklin dyeing years ago. The process was in its infancy then. Today, the Franklin Process Co. are the largest users of fast vat dyes in the United States and the quality of Franklin colors is unsurpassed.

We shall be pleased at any time to show you through any one of our three plants. We have no trade secrets. We will give you as much time as you want and answer as many questions as you care to ask.

We welcome the opportunity to tell you the real facts about Franklin dyeing.

FRANKLIN PROCESS CO.

Philadelphia **PROVIDENCE** **Manchester, Eng.**

New York Office, 72 Leonard St.

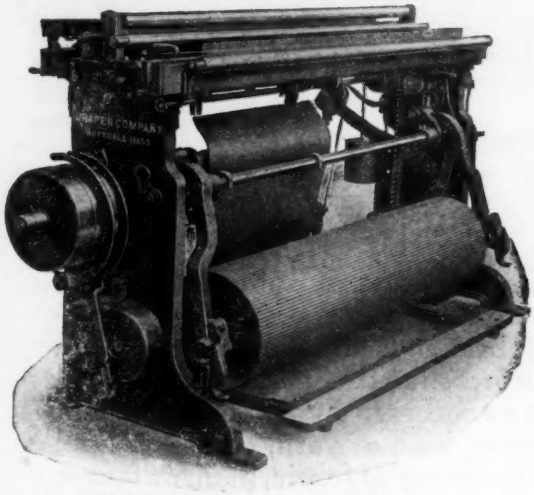
SOUTHERN FRANKLIN PROCESS CO.

Greenville, S. C.

Reduces Slasher Waste

Inequality in the length of warp yarn wound on the several different Warper beams used in a Slasher is the cause of a pronounced waste of good material.

Our Warper with Fluted Cylinder



G Model Warper with Fluted Cylinder

Gives the nearest approach to absolutely accurate measurement of yarn on Warper beams of any device ever invented.

With the Rhoades-Saulnier device, which automatically locks the Warper shipping mechanism when tripped through the action of the Warper Clock, thus preventing an overrun of yarn on the beam when full yardage has been registered, it **Reduces Slasher Waste to the Minimum.**

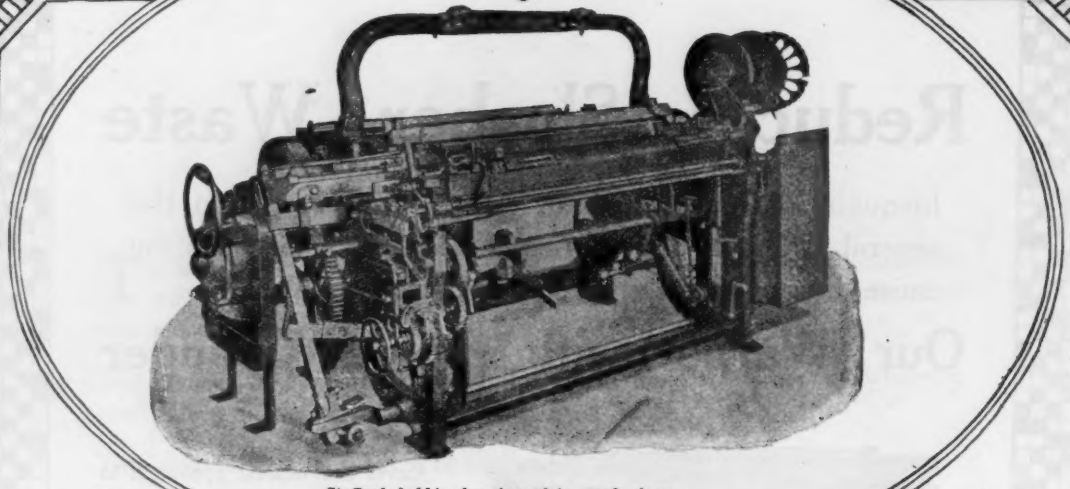
Let's Talk It Over. You want to know. Our Salesmen and Experts are at your service.

DRAPER CORPORATION

HOPEDALE, MASSACHUSETTS

SOUTHERN OFFICE ATLANTA GEORGIA

Copyright 1917 by Draper Corporation



Stafford bobbin-changing plain goods loom.

Stafford Looms Increase Production

We manufacture a complete line of automatic looms, both shuttle and bobbin-changing for weaving practically every type of fabric that can be made with a single shuttle. ¶ Stafford shuttle-changing looms will handle cop filling just as successfully as bobbin filling. We have a loom for every kind of yarn, coarse or fine, and for practically every variety of fabric, plain or fancy.

THE STAFFORD COMPANY
WEAVING MACHINERY
READVILLE, MASS.

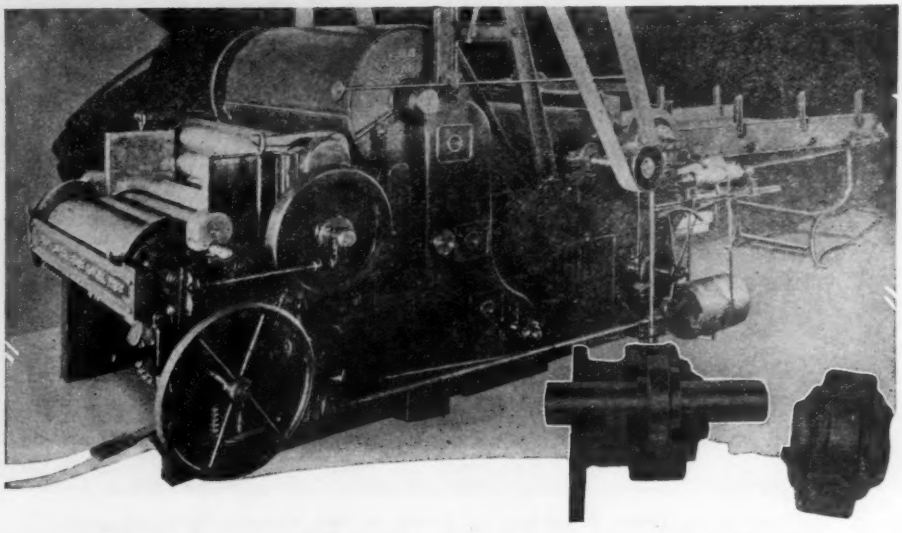
Branch Office
502 Colt Building
Paterson, N. J.

Southern Agent
J. H. Mayes
Charlotte, N. C.

Canadian Representative
Whitehead, Emmans, Limited
Montreal

AUTOMATIC
STAFFORD
LOOMS

SKF



Ball Bearings on Cotton Picker

Improve the Lap—Prevent Oil Damage

WITH plain bearings on the fan and beater shafts of cotton pickers variations in the lap are inevitable as this type of bearing frequently sticks and binds, causing the speeds of these two vital shafts to slacken. Furthermore, oil leaks out of the bearing housings,—some of it dripping onto the floor and some of it running into the machine and clogging up the spaces between the grid bars and soaking into the fibers passing over.

By using SKF marked self-aligning ball bearings to support these shafts, speed variations due to changes in bearing friction are avoided as this type of bearing always runs freely, even under conditions of misalignment.

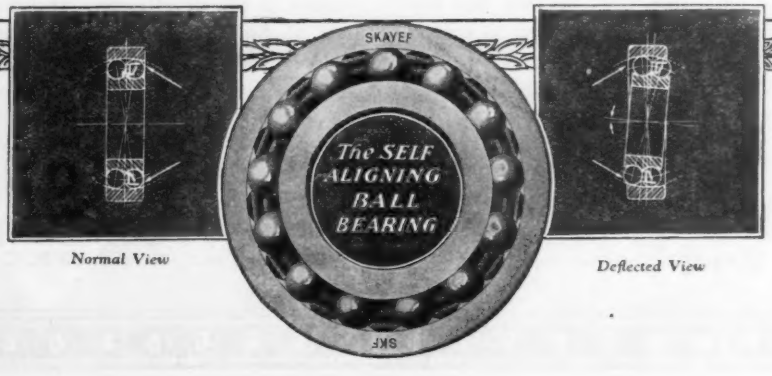
Oil cannot leak out of the sealed housings to clog the grid bars, soak the fibers and be carried onto the clothing of the flats and main cylinders of the cards.

Our engineers will gladly co-operate in changing over your present equipment or in applying ball bearings to the machines you build.

THE SKAYEF BALL BEARING COMPANY

Supervised by SKF INDUSTRIES, INC., 165 Broadway, New York City

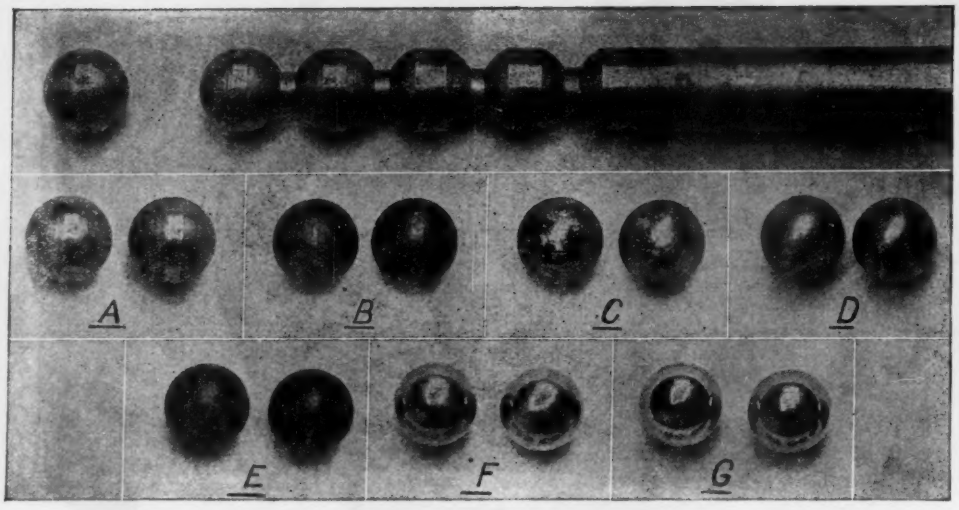
962



Normal View

Deflected View

BALL BEARINGS
The Highest Expression of the Bearing Principle



The Evolution of a Fafnir Turned Ball. A, Turning; B, First hardening; C, Rough grinding; D, Rough lapping; E, Second hardening; F, Finish lapping; G, Polishing.

WHY FAFNIR TURNED BALLS ARE BEST

Our investigation has shown that in the past the balls have invariably been the weakest part of the bearing. Consequently we have directed our energies to the development of better balls. As the result, we have found turned balls to be far superior to all others.

Balls are never loaded to anywhere near their ultimate crushing strength. Superficial metal fatigue and flaking—seldom overload—cause balls to fail. Since turned balls are practically 100% end grain, there is no "skin" or outer shell to become fatigued and flake.

Initial internal stresses and cracks, which often cause cold headed and hot forged balls to fail, never occur in turned balls, as the steel remains in its normal condition.

Higher chrome content can be used—and is used—in the manufacture of turned balls. Therefore, turned balls are much harder and tougher than those made in any other way.

Since turned balls are more expensive to make than any other kind, our only motive in the development and manufacture of *Fafnir Turned Balls* was to get better balls, and in this we have succeeded.

"The Dragon" for June tells the whole story. Ask us to send you a copy.

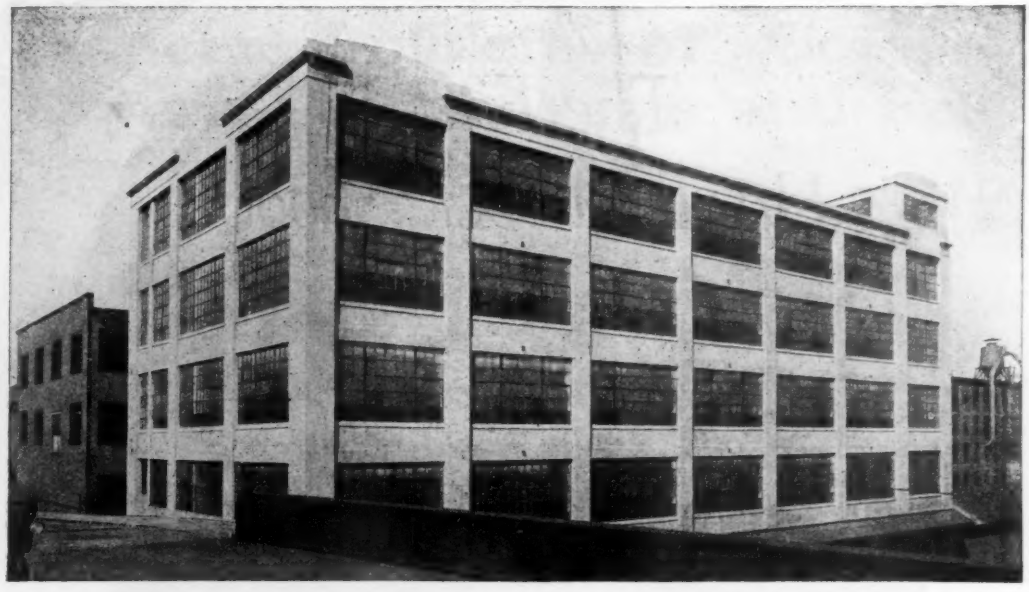
THE FAFNIR BEARING COMPANY

New Britain, Conn.

Southern Repfesentatives

O. R. S. Pool,
Box 1375, Greenville, S. C.

S. M. Smith,
P. O. Box 1423, Greensboro, N. C.



Crompton & Knowles Loom Works, Worcester, Mass.
Erected by Aberthaw Construction Company, Daylighted by Truscon Steel Windows.

Daylight for Textile Mills

Nowhere is an abundance of daylight a more important factor than in the textile mill. Light and ventilation were provided for the building illustrated above by the use of Truscon Standard Steel Windows.

These fireproof, attractive steel windows represent the highest type of steel craftsmanship both in design and workmanship. They are easily operated, economical, and provide the maximum of light and ventilation. Adaptable for any building, large or small; made in various types to suit every requirement. Ask our daylight engineers for suggestions and estimates.

Truscon Steel Company

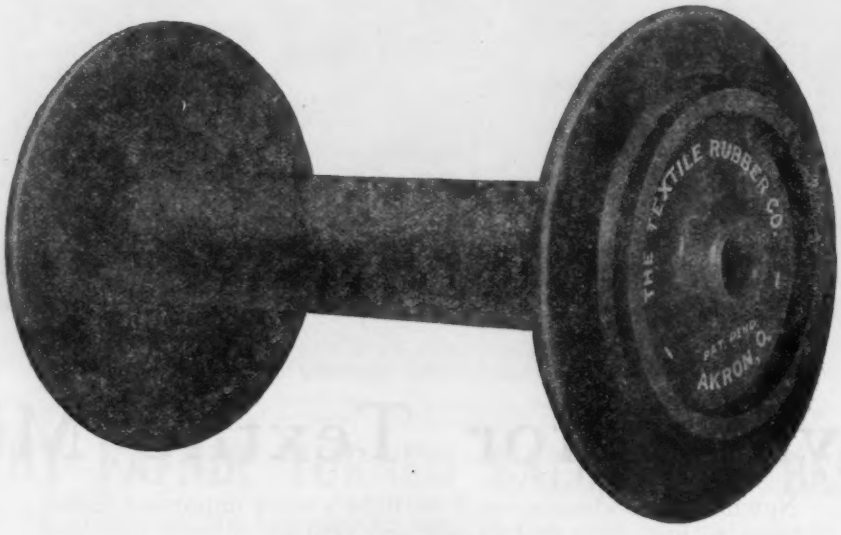
Youngstown, Ohio

Warehouses and Sales Offices from Pacific to Atlantic.
For addresses see phone books of principal cities.
Canada: Walkerville, Ont. Export Div.: New York.

TRUSCON STEEL WINDOWS

TRUSCON STEEL CO.

The First Hard Rubber Spool



Interchangeable
WITH WOODEN SPOOLS

The superior qualities of hard rubber makes it the most ideal material possible for perfect textile spools.

It assures a spool that cannot be broken, splintered, bent or dented, even when given the roughest treatment.

It assures a spool with a perfectly smooth finish with no seams or projections to catch the yarn—a finish that will never wear rough.

It assures a spool whose heads will not loosen.

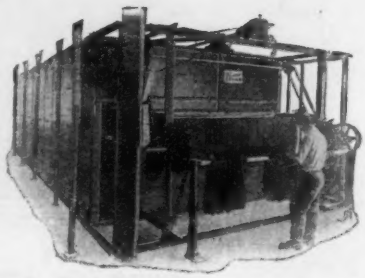
It assures a spool that will never warp, as moisture and climatic conditions have no effect upon it.

Test it yourself, and prove to your own satisfaction that it is the most perfect and economical spool possible.

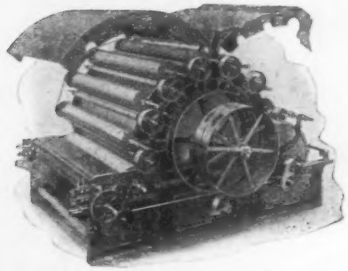
Samples gladly sent to textile mills on request.

THE TEXTILE RUBBER CO.
225 OHIO BLDG.
Akron, Ohio

Pioneer Builders of Cotton Dryers, Cotton Waste and Felt Machinery



Automatic Skein Yarn Dryer

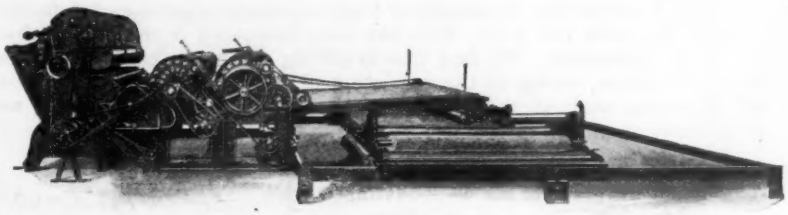


Cotton Waste Card

The first "Proctor" Dryer, built over 35 years ago, marked the beginning of modern drying machinery. Today, "Proctor" Dryers are produced in types best for raw stocks, yarns and fabrics of all kinds. The actual number installed exceeds all other makes.

"Smith-Furbush" Felting Machinery, originated over 30 years ago, now comprises 90% of the cotton felt or batt making equipment used on this continent.

The long popularity of "Smith-Furbush" Carding Machines, Willows, Pickers, Pullers, Shredders, Reclaimers, makes it increasingly evident this company is the pioneer-leader in producing Cotton Drying, Felting and Waste Machinery.



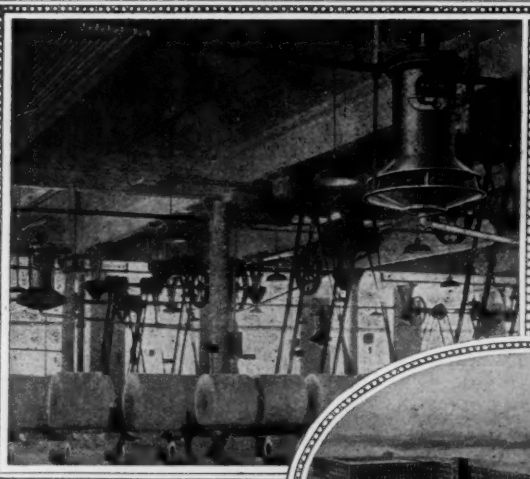
Cotton Felting Outfit

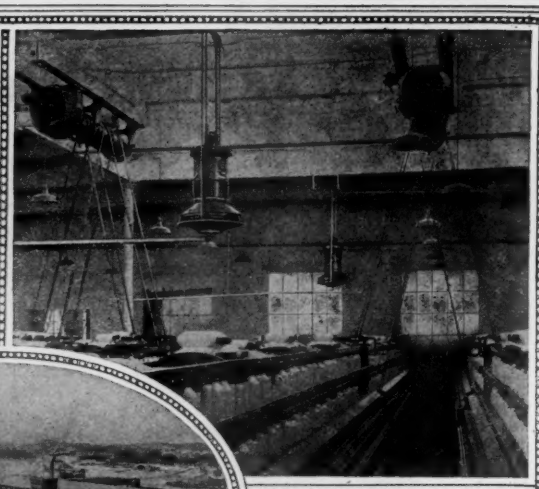
PROCTOR & SCHWARTZ, INC.

formerly

THE PHILADELPHIA TEXTILE MACHINERY COMPANY
SMITH & FURBUSH MACHINE COMPANY

PHILADELPHIA, PA.





Cabot Manufacturing Co.
Brunswick, Me.
Nathaniel F. Ayer, Treas.
William Worsnop, Agent

Sheetings, Voiles, Combed Hosiery Yarns, Yarn, Etc.
63,304 Ring Spindles
27,760 Mule Spindles
1,600 Looms

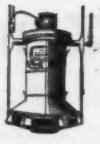
"Automatic Humidity Regulators— Get Results We Require"

"We equipped our new addition with the Parks-Cramer system of air conditioning with automatic regulation. This addition includes our Combing Department, part of Ring Spinning, Cone Winding and Cloth Room. We equipped in our main mill the Carding Department, Mule Spinning and Roving Departments. We also equipped our Conditioning Room with your system.

"This system has been running about twelve months and during this time, we have checked it up very carefully and find that we have been getting excellent results. We find that we can set our automatic regulators and be sure to get the results we require. This is very noticeable on the cold frosty mornings, as we used to be unable on these mornings to get enough humidity to make our work run well. This has been eliminated in the rooms which have your equipment. We find that in getting these results, we can make more even yarns, owing to the regulating of the humidity. This gives us better running work all through the mill. Also gives us stronger yarn and better weaving.

"By getting these results production has increased and the grade of our work has improved."

Wm. Worsnop
Agent



Parks-Cramer Company
Engineers & Contractors
Industrial Piping and Air Conditioning
Fitchburg Boston Charlotte

W
WESTINGHOUSE ELECTRIC

When You Install Westinghouse Individual Motor Drive

—Your plant will be better lighted
—Working conditions will be improved
—There will be less spoilage due to drippage
—Friction losses will be reduced
—The product will be of better quality
—Production will be increased

Practically every department of the mill can now be electrified as a result of the recent successful individual card drive developed by this company.

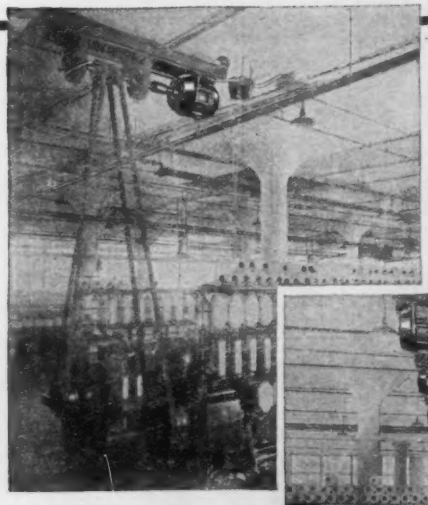
The more complete the electrification of your plant, the more evident the advantages of electrification become.

Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.
Sales Offices in All Principal American Cities

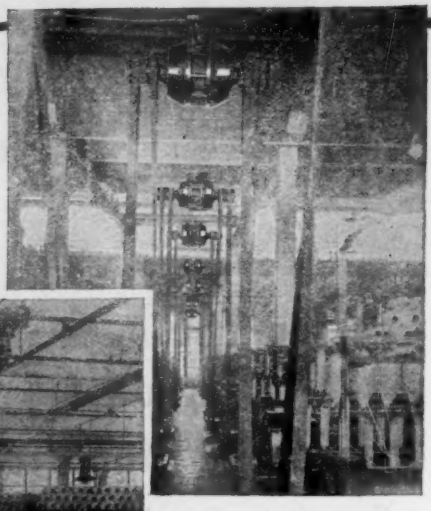
Westinghouse

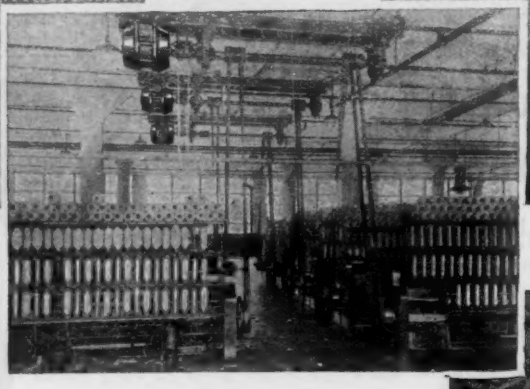
Cotton

The Clean and Efficient Drive



Carding and Roving





Best Results with G-E Motors

The use of G-E Motors provides a clean, successful way of driving Card Room machines.

All the machinery in the Card Room can utilize the light group drive method to advantage, but the tendency is more and more toward the individual drive where feasible, and where its advantages are apparent.

For individual drive, totally enclosed G-E Motors of the loom motor type, controlled by enclosed hand-operated switches giving time element thermal fuse protection, are recommended.

Slubbers, speeders and fine frames are usually driven in small groups, and good results are obtained by using either 2-frame or 4-frame drives, with G-E Motors of from 5-h.p. to 15-h.p. capacity.

G-E engineers will gladly co-operate with you in securing the most efficient motor drive for your machines.

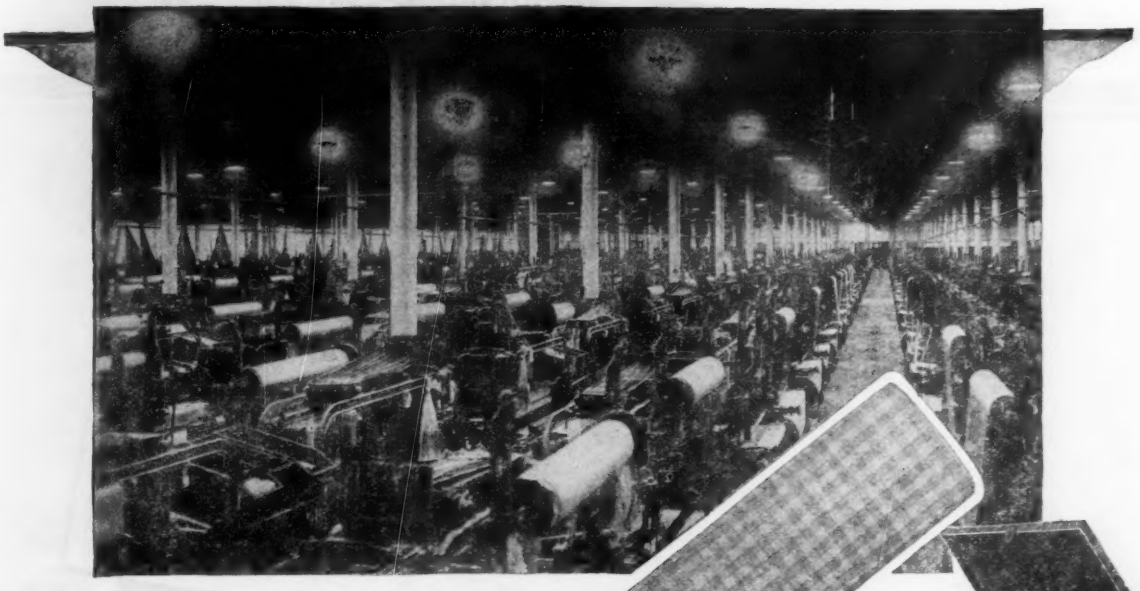
General Electric Company

General Office Schenectady, N.Y.

Sales Offices in all large cities

44-48

Is your lighting—and output—below normal?



Keep Your Voltage Up and Cut Down Waste

Induction Voltage Regulator, outdoor station type

Pole type

Waste is one of the worst "bug-bears" of the manufacturer.

Oftentimes decreased output is a result of improper lighting, and too frequently the trouble with illumination lies in the voltage. Only a 10% drop in voltage causes a 30%, and more, reduction in candle-power. So the latest types of fixtures and lamps will avail but little unless normal lamp voltage is maintained.

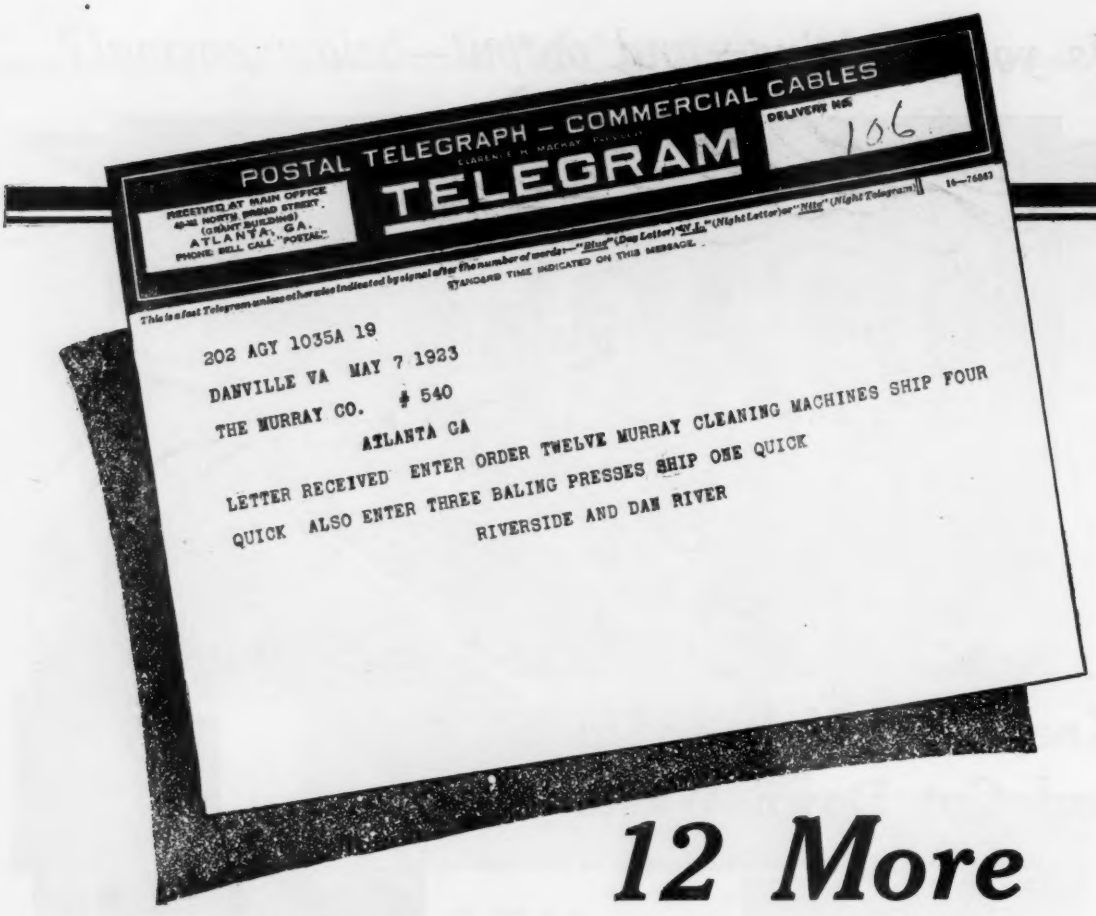
To those mills buying unregulated electric power from a Central Station, G-E Induction Regulators are of great value in holding constant voltage on lighting circuits to insure the best working conditions and consequent maximum output.

Central Stations find Induction Regulators a necessity for lighting feeders. Put them on *your* lighting circuits also.

General Electric Company
Schenectady, N. Y.
Sales Offices in all Large Cities

GENERAL ELECTRIC

13B-41


POSTAL TELEGRAPH – COMMERCIAL CABLES

TELEGRAM

DELIVERY NO. 106

RECEIVED AT MAIN OFFICE 40-42 NORTH PRYOR STREET (GRANT BUILDING) ATLANTA, GA. PHONE BELL CALL "POSTAL"

This is a fast Telegram unless otherwise indicated by signal after the number of words—"Blue" (Day Letter) "N L" (Night Letter) or "Nite" (Night Telegram)

STANDARD TIME INDICATED ON THIS MESSAGE.

202 AGY 1035A 19

DANVILLE VA MAY 7 1923

THE MURRAY CO. # 540

ATLANTA GA

LETTER RECEIVED ENTER ORDER TWELVE MURRAY CLEANING MACHINES SHIP FOUR QUICK ALSO ENTER THREE BALING PRESSES SHIP ONE QUICK

RIVERSIDE AND DAN RIVER

12 More

Repeat orders for any machine is pretty good evidence that that machine is RIGHT. Repeat orders for Murray Cotton Cleaning and Aerating Machines are coming in daily from mills who have given it a thorough trial. The above telegram is one of them.

The Riverside & Dan River Mills of Danville, Va., ordered two Murray Machines for trial purposes, which proved so satisfactory that 12 more were ordered by telegram with which to equip their entire mill properties. These machines will be used for opening and cleaning various kinds of cotton, and some of them to work on cotton after it has been dyed and rebaled.

A trial will convince you that the Murray, a machine which thoroughly cleans and aerates the cotton without injuring the fibre, is the machine which you have long wanted.

Ask for full information today.

THE MURRAY COMPANY

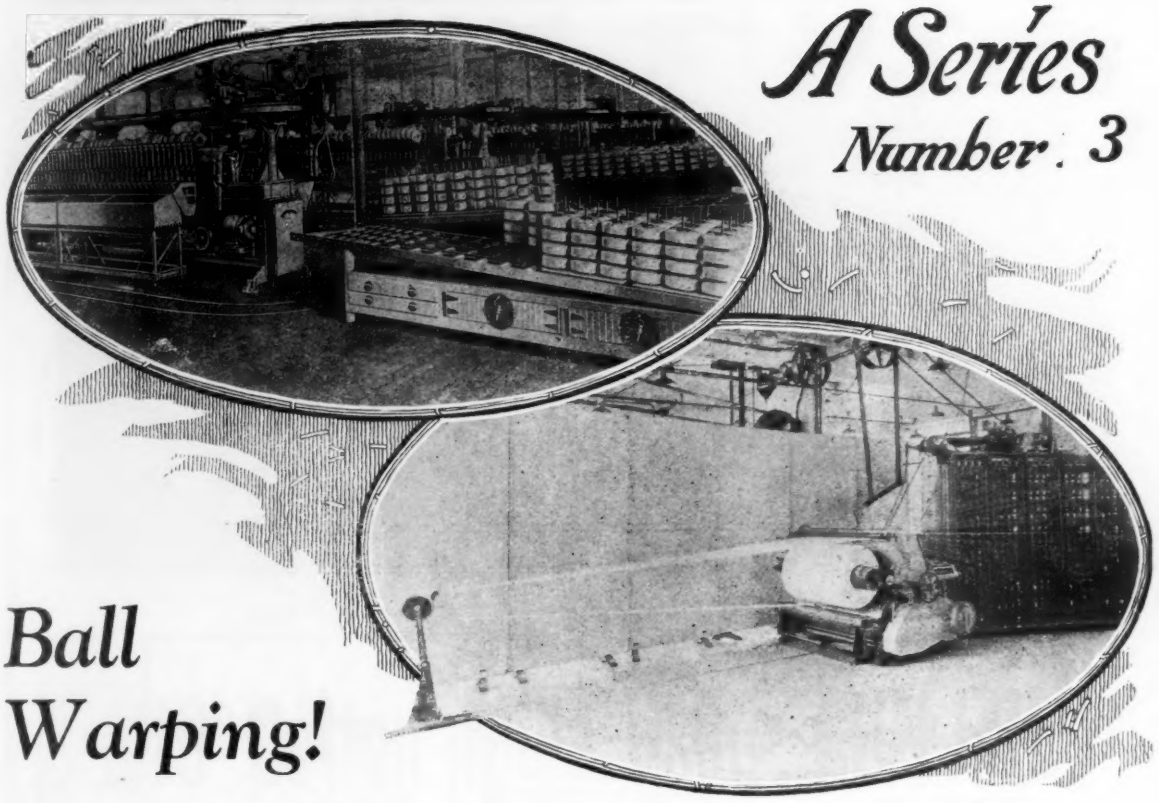
ATLANTA, GA.

COTTON WELL OPENED IS HALF SPUN

The Murray

(PAT. PENDING)

COTTON CLEANING AND AERATING MACHINE

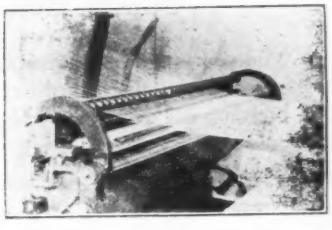


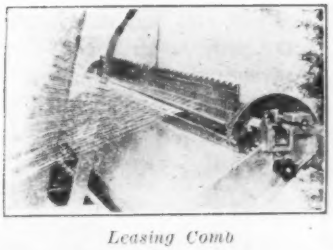
A Series Number. 3

Ball Warping!

The Barber-Colman process of Automatic spooling and High Speed Warping, originally developed for ordinary weaving mills, is extended to mills that require ball warps for dyeing, mercerizing or for sale in ball form.

The warper is equipped with a leasing comb so designed that the yarn is laid in with the same ease and speed as with the comb on our regular beam warper. The traverse motion is positive and accurate, tension from ball bearing spools low and uniform, making a perfect ball.





Leasing Comb

FULL DATA SENT ON REQUEST.

BARBER-COLMAN COMPANY

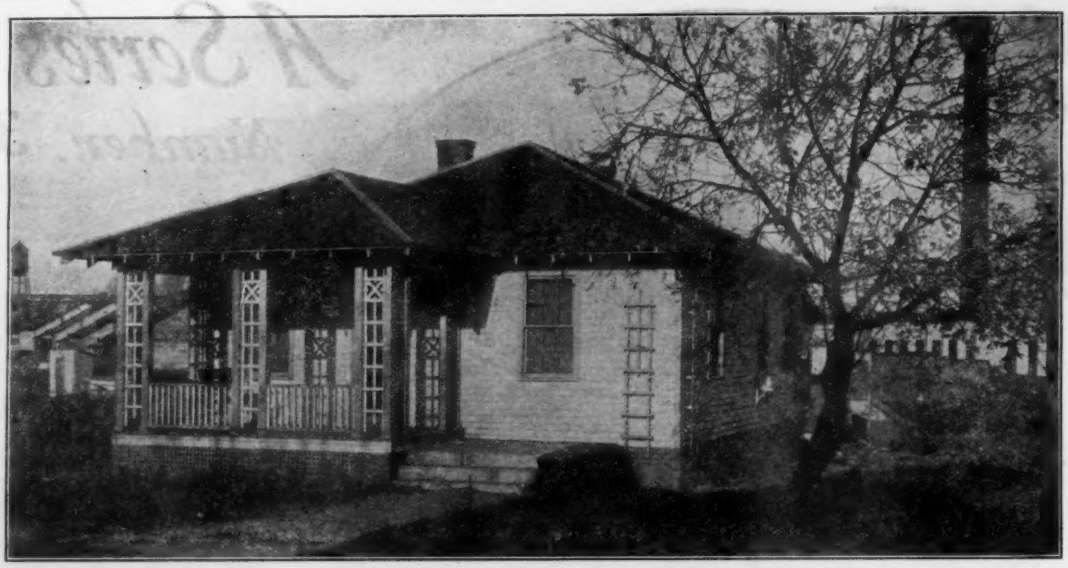
ROCKFORD, ILL.

BOSTON, MASS. GREENVILLE, S. C.

BARBER-COLMAN SYSTEM OF SPOOLING AND WARPING

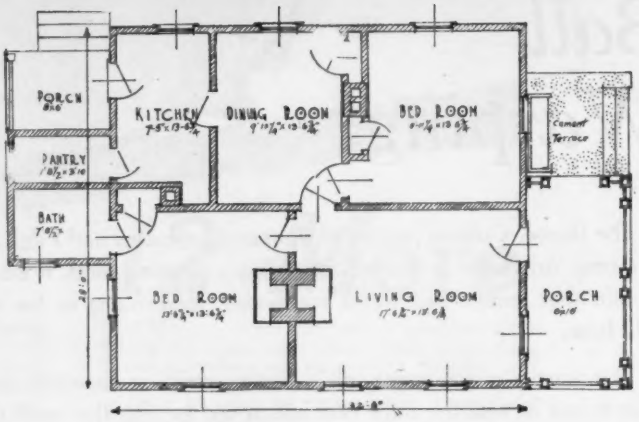
AUTOMATIC SPOOLER *with* WEAVERS KNOTTER

HIGH SPEED WARPER



ABOVE—Photograph showing one of the 27 Minter Homes recently erected for the Hermitage Cotton Mills, Camden, S. C.

AT RIGHT—Floor plan showing room arrangement of this pleasing and comfortable home.



The Minter Homes Company Directs the Building of Minter Homes

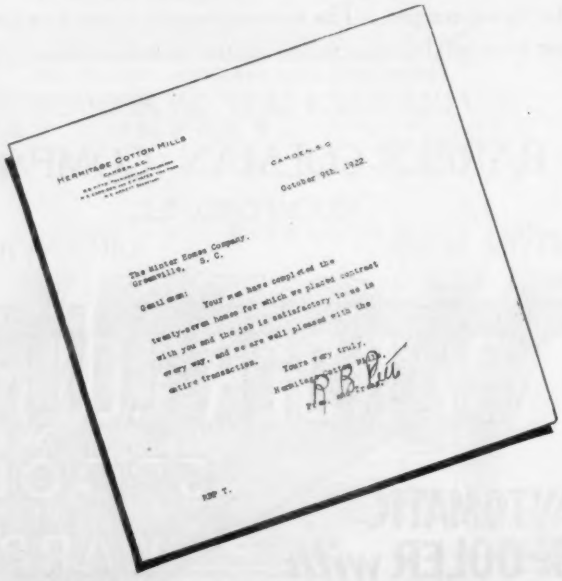
Minter Homes are turned over to owners all ready for the use of employees. The building is carried on by our own erection crews.

This assures the purchaser of Minter Homes not only of perfect materials but also of perfect construction.

When you purchase Minter Homes you not only make a considerable monetary saving but you automatically relieve yourself of a bothersome mass of detail.

Cotton Mill executives who plan Mill Village buildings are urged to write for complete details on the Minter System of Building and the saving of time, money and trouble which these methods make possible.

THE MINTER HOMES COMPANY
GREENVILLE, SOUTH CAROLINA
MINTER HOMES CORPORATION
HUNTINGTON, WEST VIRGINIA


HERMITAGE COTTON MILLS
CAMDEN, S. C.
October 9th, 1922.
The Minter Homes Company.
Greenville, S. C.
Gentlemen:
Your men have completed the twenty-seven homes for which we placed contract with you and the job is satisfactory to us in every way, and we are well pleased with the entire transaction.
Yours very truly,
Hermitage Cotton Mills,
P. B. Gill
Pres. and Treas.

THE FUN-FUL LINE

PLAYGROUND EQUIPMENT

349 Cotton Mills Using FUN-FUL!

A few of them

Pacific Mills—Columbia, S. C.
Columbia Mills—Columbia, S. C.
Wymojo Mills—Rockhill, S. C.
Woodside Mills—Greenville, S. C.
Pacolet Mills—Pacolet, S. C.
Drayton Mills—Spartanburg, S. C.
Monarch Mills—Union, S. C.
Langley Mills—Langley, S. C.
Grendel Mills—Greenwood, S. C.
Greenwood Mills—Greenwood, S. C.
Belton Mills—Belton, S. C.
Loray Mills—Gastonia, N. C.
Gray Mills—Gastonia, N. C.
Arlington Mills—Gastonia, N. C.
Flint Mills—Gastonia, N. C.
Cannon Mills—Kannapolis, N. C.
P. H. Hanes Mills—Winston-Salem, N. C.
Proximity Mills—Greensboro, N. C.
Durham Mills—Durham, N. C.
Roxboro Mills—Roxboro, N. C.
Tolar-Hart-Holt Mills—Fayetteville, N. C.
Hart Mills—Tarboro, N. C.
Pilot Mills—Raleigh, N. C.
Cardinal Mills—West Point, Miss.
Lauderdale Mills—Meridian, Miss.
Danville Mills—Danville, Va.
Schoolfield Mills—Schoolfield, Va.
Bonham Mills—Bonham, Texas.
Sherman Mills—Sherman, Texas.
Corsicana Mills—Corsicana, Texas.
Itasca Mills—Itasca, Texas.
Brazo Valley Mills—West, Texas.
Prendergast Mills—Prendergast, Tenn.
Davis Mills—Chattanooga, Tenn.
Avondale Mills—Birmingham, Ala.
Lanett Mills—Lanett, Ala.
Anniston Mills—Anniston, Ala.
Montgomery Mills—Montgomery, Ala.
Fulton Bag Mills—Atlanta, Georgia.
Exposition Mills—Atlanta, Georgia.
Calloway Mills—LaGrange, Georgia.
Moultrie Mills—Moultrie, Georgia.
Trion Mills—Trion, Georgia.
LaFayette Mills—LaFayette, Georgia.
Bibb Mills—Macon, Georgia.
International Mills—LaGrange, Georgia.

At the Brazilian Centennial Exhibition at Rio de Janeiro, Brazil, South America, which has just closed, HILL-STANDARD Equipment was awarded the gold medals.

Catalog on request

HILL-STANDARD CO.

Anderson, **Our 22nd year** Indiana

Let Us Add Your Name To This List

OUR service to textile mills is the result of years of experience in installing textile theatre equipment. Our representatives call upon the mills personally, lay out the plans, advise on the proper equipment required and finally supervise the installation and the starting of the theatre. In other words, they take the whole problem off your hands and do not turn over the work to you until the theatre is operating satisfactorily.

The textile industry is demanding the best moving pictures for their employees and that is why they regularly specify POWER'S PROJECTORS.

That is why more Power's Projectors are used by textile mills in the South than all other projectors combined.

We carry a complete line of supply parts and equipment at our various branches. Your orders for supply parts will be filled the same day the order is received. Whatever are your needs for your theatre, we can supply them.

We have a special offer for Textile Mills. May we present it to you?

Satisfied Users of POWER'S PROJECTORS

ALABAMA

W. A. Handley Mfg. Co.	Roanoke
Tallassee Mills	Tallassee
Fairfax Mill	Fairfax
Avon Mills	Sylacauga
Lanett Cotton Mills	Lanett
Indian Head Mills	Cordova
Selma Mfg. Co.	Selma
Buck Creek Cotton Mills	Silaria

GEORGIA

Elm City Cotton Mills	LaGrange
Bibb Mfg. Co.	Porterdale
Roswell Mfg. Co.	Roswell
Gainesville Cotton Mill	Gainesville
Bibb Mfg. Co.	Columbus
Pacolet Mfg. Co.	New Holland
Manchester Cotton Mills	Manchester
Milstead Mfg. Co.	Milstead
Thomaston Cotton Mills	Thomaston
Exposition Cotton Mill	Atlanta
Habersham Mill	Habersham
Trion Company	Trion
Union Point Mfg. Co.	Union Point
Hillside Cotton Mill	LaGrange

NORTH CAROLINA

Durham Hosiery Mills	Durham
Pamona Mills	Greensboro
Cleveland Mill & Power Co.	Lawndale
Rodman-Heath Cotton Mills	Waxhaw
Rocky Mount Mills	Rocky Mount
Cherokee Falls Mfg. Co.	Cherokee Falls
Roxboro Cotton Mills	Roxboro
Consolidated Textile Corp.	Burlington
Carolina Cotton & Woolen Mills	Spray
Erwin Cotton Mills	Duke
Cannon Manufacturing Co.	Kannapolis

SOUTH CAROLINA

Baldwin Cotton Mills	Chester
Tucapau Mills	Tucapau
Ware Shoals Mfg. Co.	Ware Shoals
Glenn-Lowry Mfg. Co.	Whitmire
Monaghan Mills	Greenville
Drayton Mills	Spartanburg
Victor Mills	Greer
Conestee Mills	Conestee
Kershaw Cotton Mills	Kershaw
Abbeville Cotton Mills	Abbeville
Chesnee Mills	Chesnee
Union-Buffalo Mills	Buffalo
Victor-Monaghan Mills	Seneca
Victor-Monaghan Mills	Jonesville
Pacolet Mfg. Co.	Pacolet
Aragon Mills	Reckhill
Graniteville Mfg. Co.	Vancluse
Woodside Cotton Mills	Greenville
Orr Cotton Mills	Anderson
Issaqueena Mills	Central
Clifton Mfg. Co.	Clifton
D. E. Converse Co.	Glendale
Winnsboro Mills	Winnsboro
Monarch Mills	Lockhart
Republic Cotton Mills	Great Falls

Southern Theatre Equipment Company

WILLIAM OLDKNOW, President.

100 Walton St.
ATLANTA, GEORGIA

THREE TWENTY-EIGHT CALIFORNIA ST.,
OKLAHOMA CITY, OKLA.

Eighteen Fifteen Main St.
DALLAS, TEXAS

GRAB-BAG BUYING!

"Dump them all in a grab-bag—shake well—then pull out the first one you touch. You'll save lots of time; one's as good as another. You'll get just what you pay for, and no more.

"That's the parting shot a business man gave me years ago. I believed in cheap paints then, and I was trying to pick the best of the lot. You get what you pay for—but you don't. It costs just as much in labor—and that's 75% of the cost of painting—to put on a temporary finish as it does to apply Hockaday, a permanent paint."

Repeat Orders---The Test of Hockaday

Here's a few of the mills that have re-ordered:

Grendel Mills	31 Orders	Watts Mills	21 Orders
Mills Mfg. Co.	9 "	Oakland Mills	10 "
Chadwick-Hoskins Co.	11 "	Clinton Mills	11 "
Saxon Mills	15 "	Dayton Mills	13 "
Pacolet Mfg. Co.	15 "	Mollohon Mfg. Co.	17 "

Don't Class Hockaday with "ready mixed paints." It's different. Hockaday comes in two parts, Body and Reducer.

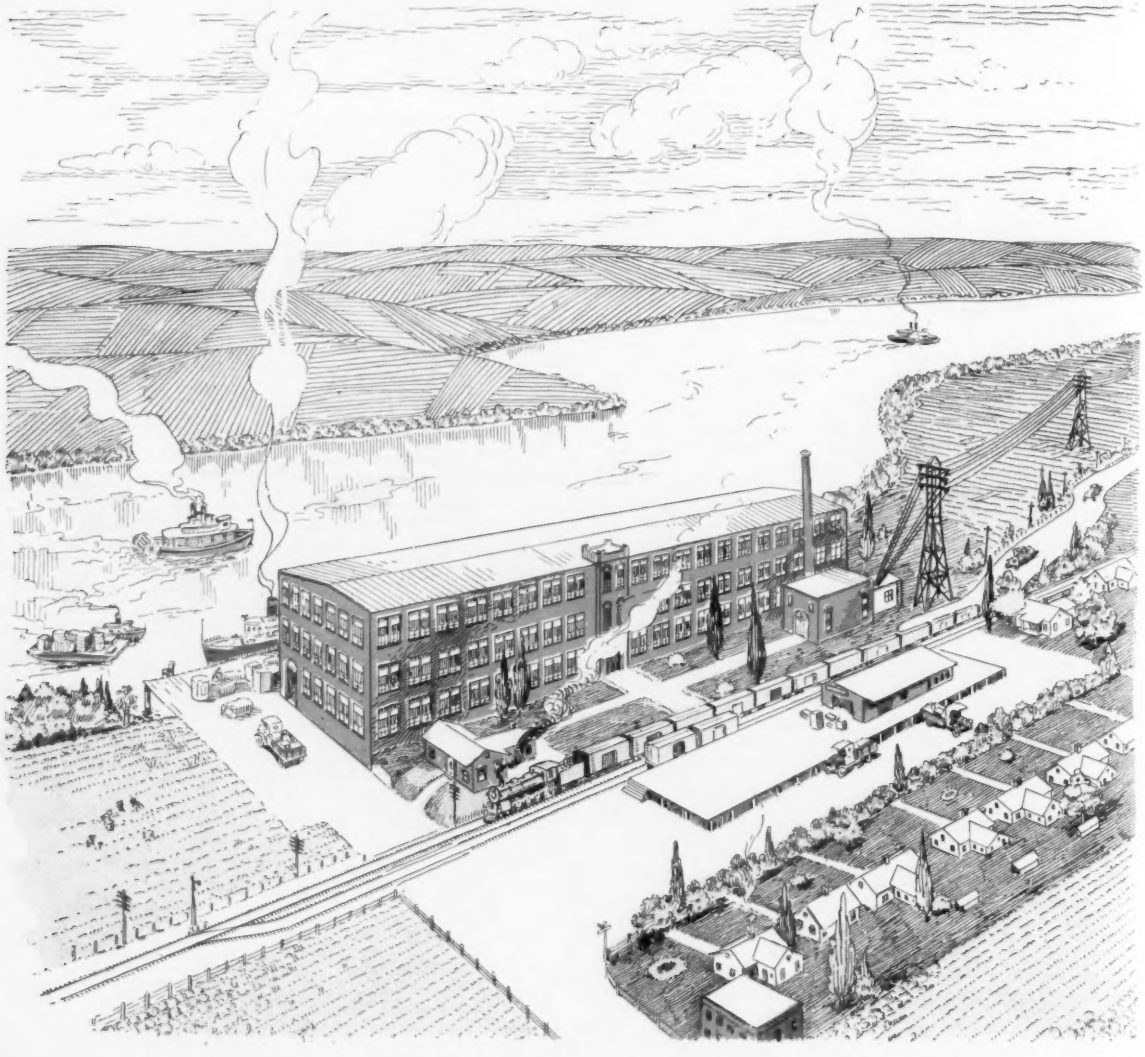
Write for "Solving Your Painting Problems"—the book that defies precedent. It will be sent gladly.

THE HOCKADAY COMPANY
1823-1829 CARROLL AVENUE CHICAGO
Southern Office, Newberry, S. C. O. H. Johnson, Mgr.

HOCKADAY

THE WASHABLE PAINT FOR ALL INTERIORS

Tennessee-The Hea



The Tennessee El

...rt of Industrial America

Transportation Facilities in Tennessee

Transportation facilities in Tennessee are such that practically every community is in close touch with the markets of the world. Five great railroad trunk lines span the state together with other smaller roads, the aggregate railroad mileage being 4,325.

Water transportation is available on the large navigable rivers which have a total milage of 1,374 miles. The Mississippi and Tennessee Rivers in the western part of the state, the Cumberland in the central and the Tennessee in the eastern section afford cheap waterway transportation and the proximity of these routes to the various cities and communities assures to them advantages in the way of competitive freight rates.

Numerous highways, well kept and maintained, make travel ideal by auto and truck to all sections of the state.

Tennessee's natural resources and unlimited raw materials make it almost unnecessary for manufacturers to go outside of the state for supplies of any kind. These factors, together with the central location of the state and its adequate facilities of transportation, make Tennessee the logical location for new plants or branch units in the textile industry—where finished products can be manufactured more economically and shipped more conveniently to the numerous markets of the world.

Write us for further information relative to the many advantages of Tennessee and the opportunities and sites offered textile mills.

THE TENNESSEE ELECTRIC POWER CO.

CHATTANOOGA, TENN.

FIVE ADVANTAGES IN TENNESSEE

1. Ideal climate the entire year.
2. Raw materials of all kinds in abundance.
3. Market facilities — unsurpassed rail and water transportation.
4. Ample supply of intelligent and stable labor.
5. Continuous and reliable electric power at low cost.

...lectric Power Co.

The Vantage Ground for Viewing Nature's Masterpiece In Scenic Art

ASHEVILLE—universally recognized as the ideal playground and health resort of America—offers you in its newest and largest tourist hotel the embodiment of perfection in hoteldom with an atmosphere that causes the veriest strangers to feel at home.

The site is an exclusive one upon a high plateau overlooking the beautiful Swannanoa River. Every room is an outside, sunshine room which overlooks a magnificent scenic panorama of ever-changing hues and visions dominated on the east by Mount Mitchell, the "Top of Eastern America," and on the west by the scarcely less lofty Mount Pisgah and the Rat.

KENILWORTH INN

is picturesque and inviting. The foyer with its great stone open fireplace and cosy ingle-nook and comfortably cushioned high back oaken settees, the large and cheerful reception room which leads to the spacious ballroom that is one of the largest and handsomest apartments of its kind in the South where music for dancing and daily concerts is provided by the Spencer Orchestra of New York, the palm rooms and open terraces which afford alluring tete-a-tete nooks for "sitting out" between dances, the immense dining room which occupies nearly the whole main floor of a north wing alcoved on one side with bay windows and on the other side glass doors which enter into a sun room which is much in demand for numerous special luncheon and dinner parties drawn to the hotel by the fame of its *cuisine*. On the lower floor also is a fine modern convention hall with capacity for six hundred which has its own buffet rooms and offices.

The wonderful out-of-doors provides every opportunity for your fullest enjoyment. On the immediate grounds are tennis courts and a clock golf course planned and completed by professionals. Cards are provided guests for the privileges of two conveniently situated eighteen hole golf courses, those of the Biltmore Forest Country Club and the Asheville Country Club where tournaments of international interest take place.

Horseback riding is always a favorite pastime with Kenilworth guests because of the sequestered beauty of the bridle paths leading from and around it. At the end of the winding roads leading down from the plateau to a level space is a large enclosed riding academy with an unobstructed ring where the first annual Kenilworth and Biltmore Forest Horse Show will take place in August. The gardens and grounds of the famous Biltmore House are open to the public two days of every week.

For further information and rates, address

Kenilworth Inn

Asheville, N. C.

Reception Room—Ballroom in Background.

ALABAMA OPPORTUNITIES

Favoring the Cotton Mill and Textile Industry

Here are facts worthy of careful consideration by the cotton mill and textile operator who contemplates expansion or new locations. LABOR TROUBLES, FUEL SHORTAGE, RAW MATERIAL SUPPLY, WATER SUPPLY, POWER SHORTAGE, EPIDEMICS, CURTAILED TRANSPORTATION, **Have Never Forced Restriction of Output or Activities in the Textile Industry in Alabama.**

RAW MATERIAL

Alabama produces annually an average of 800,000 bales of cotton, and only about 48% of this is consumed by spindles within the state. Proximity of fields to the mills obviates the necessity of freight haulage. Practically the entire crops of Mississippi and Alabama are now available to Alabama mills.

LABOR

More than 98% of Alabama's population is native born Americans. Large per cent reside in rural and semi-rural communities. Loyal, willing and efficient workers in abundance.

POWER SUPPLY

The Alabama Power Company has 371,400 available horsepower of hydro-electric and steam generating capacity; 1,500 miles of high tension transmission lines, covering 25-000 miles of Alabama territory; assuring ample supply of power at almost any desired point, at low cost.

WATER SUPPLY—Alabama is traversed by myriads of streams that insure ample water supply at all times for all purposes. For industrial purposes there is a potential maximum horsepower of 943,000. Many very large springs throughout the State afford ample supply of the purest water.

FUEL—Alabama produces an average of nearly seventeen million tons of coal annually. With thousands of acres of coal fields undeveloped, the fuel supply of the State is practically unlimited and inexhaustible. Fuel is available from nearby mines at low cost.

HEALTH—Health in Alabama is above the average anywhere in the South. The death rate is 11.1%; being 2.5% to 4.7% lower than several states in the textile area of New Englend.

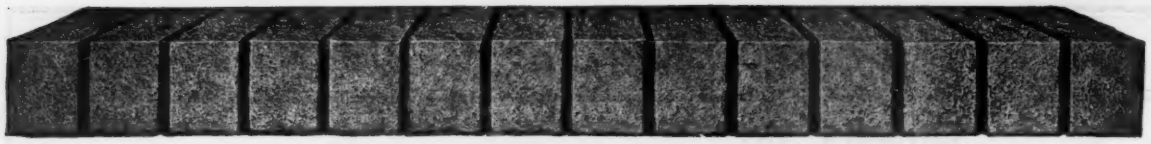
TRANSPORTATION—5,350 miles of railroads in Alabama connecting the great trunk line systems of the country; Federal operated barges on the Warrior River; seaport at Mobile to all world ports.

SITES AND TAXATION—Free building sites are offered by many communities. Some counties and municipalities offer five-year exemptions from all forms of taxation.

"MAKE IT IN ALABAMA"—where everything favors the Textile Industry.

Alabama Power Company

BIRMINGHAM, ALA.



Factory Floors—City Streets

THE TRAFFIC is different in character but in certain vitally important key-spots the wear-and-tear is no less severe.

Loading platforms, receiving platforms, main truck-ways, certain departments and all drives serving the plant need the traffic-tested toughness of Vitrified Paving Brick.

What other paving surface, at equally low cost, will not, in time, rut, crack or crumble, grow slippery from absorbed oil and grease or disintegrate from the action of moisture or acid?

A vitrified brick pavement underfoot at the start reduces pavement-overhead later in city, state or factory.

In one instance the tax-payer saves—in the other, the stock-holder.

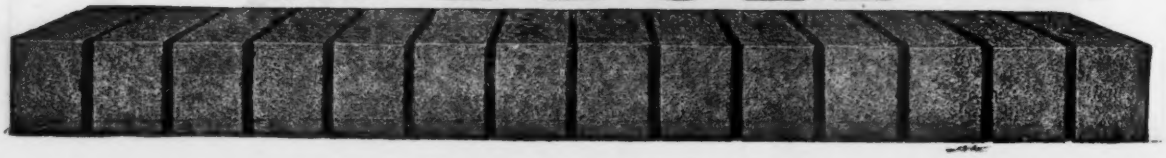
A suitable specification for any particular requirement gladly furnished on request.

NATIONAL PAVING BRICK MANUFACTURERS ASSOCIATION
ENGINEERS BUILDING CLEVELAND, OHIO

FOR ENDURING PAVEMENTS—

VITRIFIED

Brick



SOLVED!

-the old plant re-made without a shut-down

HERE was a mill that had completely outgrown itself. With the demand steadily growing, more production capacity was essential. Yet the company, if it was to continue giving service to its customers, could not afford to close down a single day.

Lockwood, Greene & Co. met the problem by entirely rehabilitating and modernizing the mill, installing a new power plant, new machinery and improving the old. The equipment in the picker room was increased and new pickers were equipped with individual motors. The spinning mill was enlarged with additional frames run by individual chain-driven motors. In the weaving mill, 160 Draper looms were added. These improvements were all made without any interruption of production.

In solving such problems, Lockwood, Greene & Co. have the great advantage of long experience as leaders in textile mill engineering. Hardly a situation arises that does not have its precedent in Lockwood-Greene experience.

Lockwood-Greene service includes every phase of engineering and management from the planning of new mills to the operation of existing plants. Write for "Building With Foresight," which describes what Lockwood-Greene service has accomplished for others. Or, better still, let us discuss with you your particular problems.

BUILDING WITH FORESIGHT

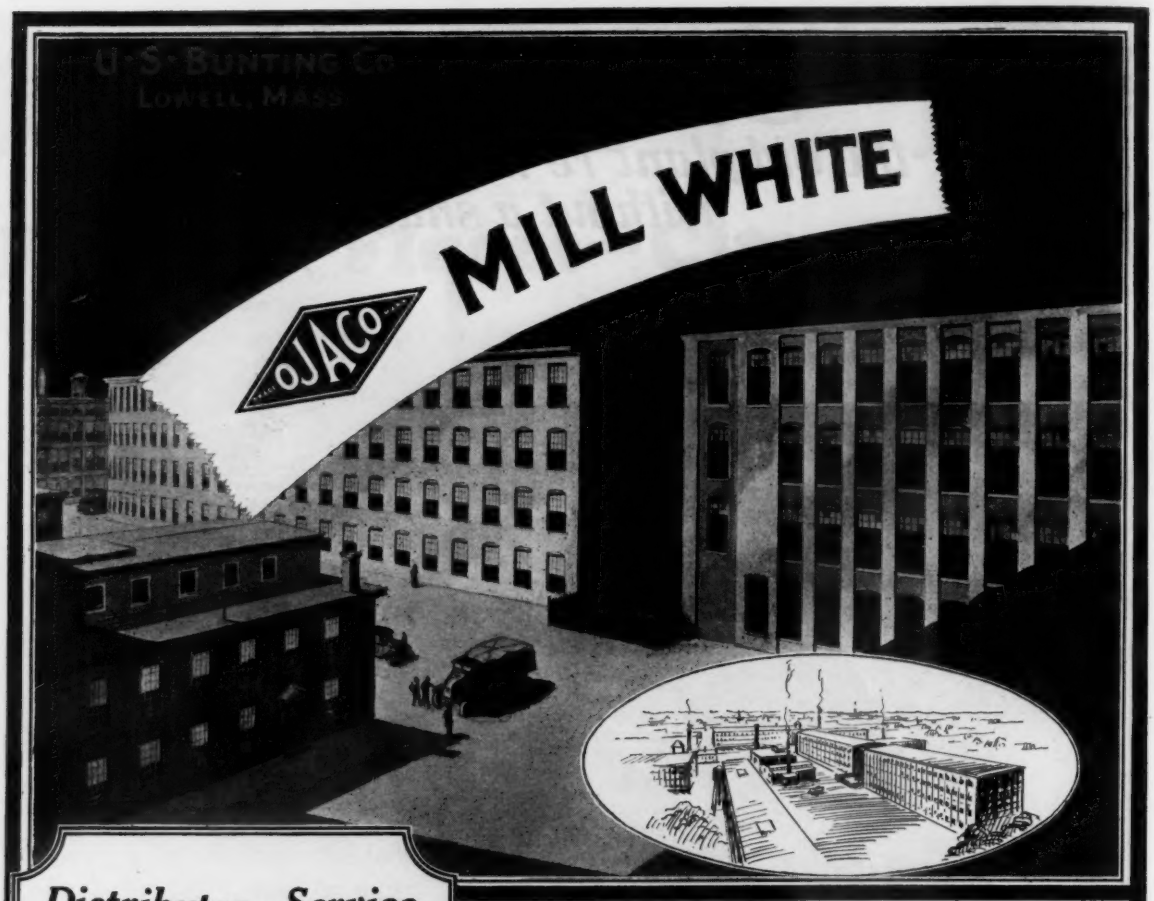
LOCKWOOD, GREENE & CO.

ENGINEERS

EXECUTIVE OFFICE, 24 Federal Street, BOSTON 9

BOSTON ATLANTA CHICAGO NEW YORK DETROIT CLEVELAND CHARLOTTE

Lockwood, Greene & Co. of Canada, *Limited*, Montreal; Compagnie Lockwood Greene, Paris, France



Distributor Service

BOSTON, MASS
Lewis E. Tracy Co.

CHARLOTTE, N. C.
Charlotte Supply Co.

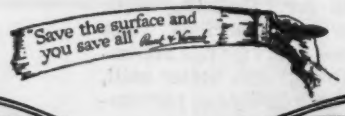
FALL RIVER, MASS.
Wm. F. Harticon

HOLYOKE, MASS.
J. Russell & Co.

ROCHESTER, N. Y.
F. P. Van Hosen Co.

SYRACUSE, N. Y.
Alexander Grant's Sons & Co.

UTICA, N. Y.
American Hard Wall Plaster Co.



U. S. Bunting Co.,
Lowell, Mass.

Making Mill Walls *Work:—*

THE U. S. Bunting Company, manufacturers of worsted men's wear and bunting, makes its plant interior augment the productive efforts of men and machinery.

Throughout the great mills pictured above, this is accomplished most effectively by walls and ceilings painted with OJACO Mill White.

Daylight and artificial light are now refracted and evenly diffused, insuring adequate illumination for the entire working area.

For further details concerning OJACO Mill White, consult the nearest OJACO distributor listed opposite, or write to us direct.

Oliver Johnson & Co., Inc.

Paint Makers since 1833

PROVIDENCE, R. I.

THE FUNCTIONS OF THE ENGINEER

Fine Goods Bleacheries and Finishing Plants

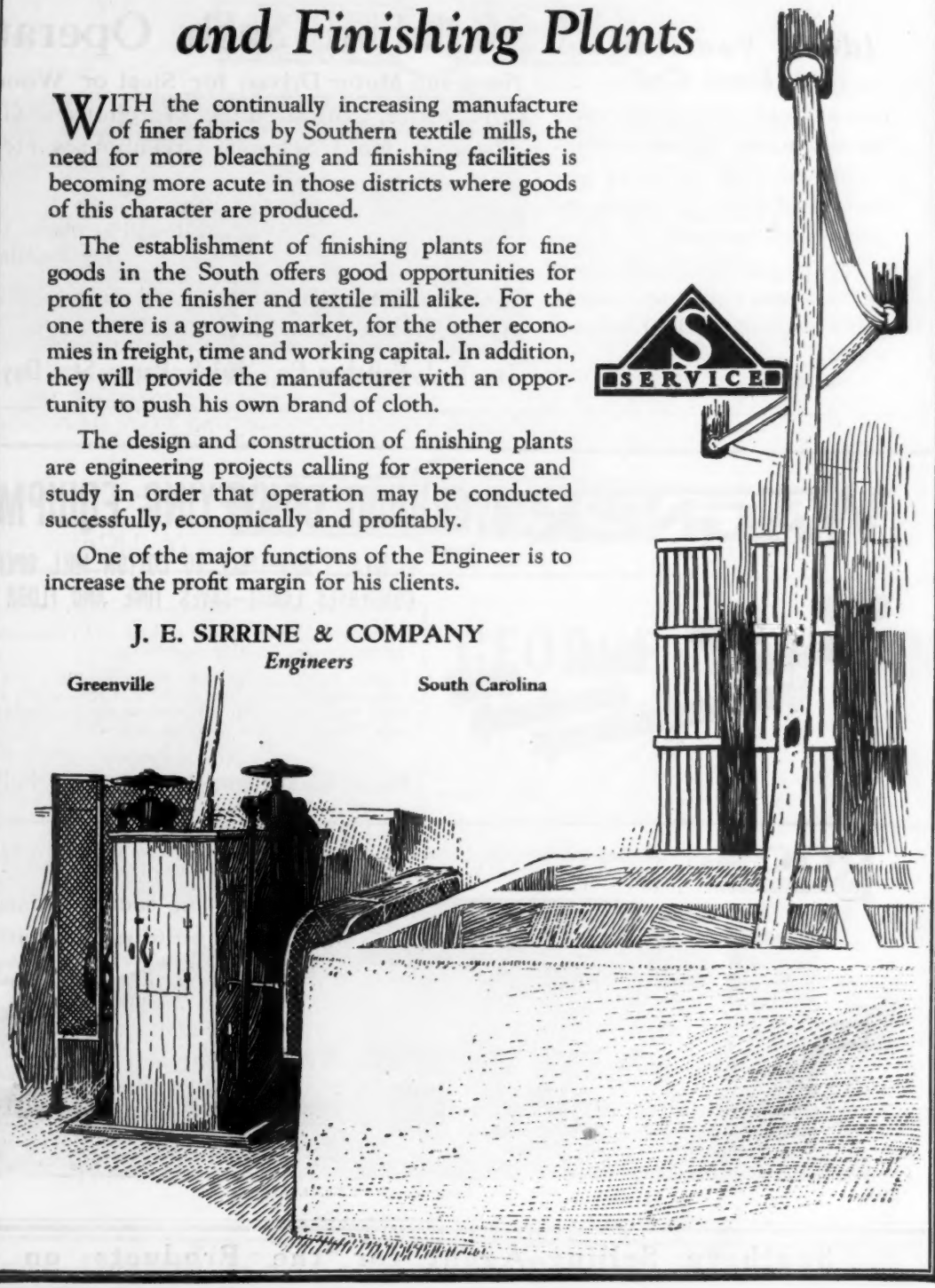
WITH the continually increasing manufacture of finer fabrics by Southern textile mills, the need for more bleaching and finishing facilities is becoming more acute in those districts where goods of this character are produced.

The establishment of finishing plants for fine goods in the South offers good opportunities for profit to the finisher and textile mill alike. For the one there is a growing market, for the other economies in freight, time and working capital. In addition, they will provide the manufacturer with an opportunity to push his own brand of cloth.

The design and construction of finishing plants are engineering projects calling for experience and study in order that operation may be conducted successfully, economically and profitably.

One of the major functions of the Engineer is to increase the profit margin for his clients.

J. E. SIRRINE & COMPANY
Engineers
Greenville **South Carolina**



GEORGE DOWMAN

610-611 Walton Building, Atlanta, Ga.

Ideal Ventilation at Least Cost

is secured only through wide-opening sash in side walls or monitors.

Callahan Sash Operators give the greatest degree of opening and are the least expensive.

They may be used on either long or short runs of sash and may be either manually or electrically operated.

Callahan Sash Operators

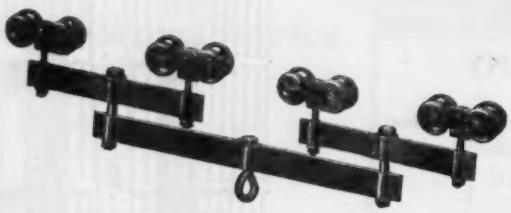
Hand and Motor Driven for Steel or Wood Sash in Factories, Cotton Mills, Warehouses, Garages, Theatres, Banks, Schools, Greenhouses, etc.

Neat in Appearance—
Positive in Action—
Simple to Install in Old or New Buildings—

Write for descriptive Catalog and prices. Estimates gladly furnished from blueprints.

The T. J. Callahan Co., 803 S. Perry St., Dayton, O.

WAGNER OVERHEAD CONVEYING EQUIPMENT



IS IDEALLY ADAPTABLE TO COTTON MILL OPERATIONS CONSERVES LABOR---SAVES TIME AND FLOOR SPACE

Do your trucking on the ceiling and consolidate your conveying and hoisting operations.

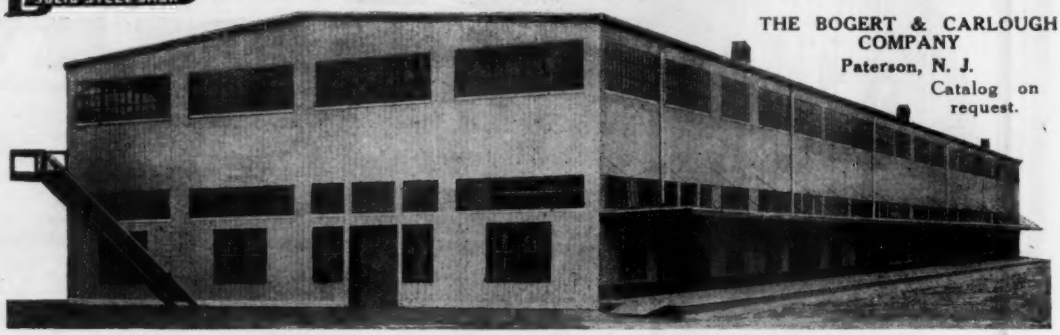
Wagner Equipment includes a complete line of Switches, Crossovers, Curves, and Cranes. Carriers are equipped with high grade roller bearings and can be furnished with "Hyatt" Roller Bearings if desired.

Write for Catalogue

Wagner Manufacturing Company, Cedar Falls, Iowa.

BOCA SOLID STEEL SASH

Adapted to all types of construction—schools, office buildings and industrial buildings, whether of brick, concrete, terra cotta, steel or wood.



THE BOGERT & CARLOUGH COMPANY
Paterson, N. J.
Catalog on request.

Winslow Warehouse, Commercial Dock No. 1, Norfolk, Va.

Southern Selling Agent for the Products on These

CONTRACTORS AND SALES ENGINEEERS

VARIETY FIRE DOORS

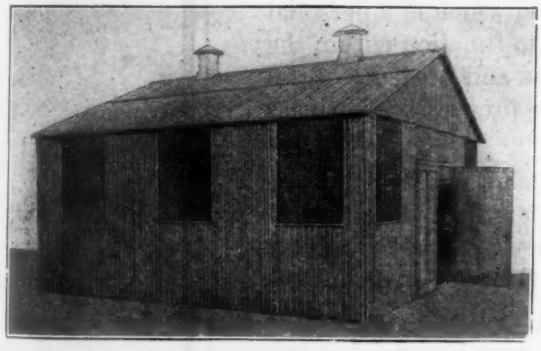
61 CROSS-HORIZONTAL FOLDING DOORS
ERECTED ON POSTS 7½ INCHES x 7½ INCHES
AMERICAN RAILWAY EXPRESS COMPANY'S BLDG.
CHICAGO, ILLINOIS

MANUFACTURERS OF A COMPLETE LINE OF LABELED FIRE DOORS

ROLLING STEEL DOORS
HOLLOW METAL DOORS
KALAMINE DOORS
SAINO DOORS
VAMANCO COUNTER BALANCED ELEVATOR DOORS
VARCLAD COUNTER BALANCED ELEVATOR DOORS
TIN CLAD DOORS
PRESSED STEEL FRAMES
STEEL STOREROOM DOORS

VARIETY FIRE DOOR COMPANY

2958 CARROLL AVE. CHICAGO, ILL.



a permanent building erected in a short time

Sometime the need of a permanent building quickly will confront you. Such a need has been experienced by many large manufacturers in the East; and Maryland Metal Buildings have taken care of this need.

When you consider plant expansion or building an entirely new factory, be sure to investigate the advantages of Maryland Metal Buildings. These buildings will last a lifetime. They are formed in standard units of No. 24 gauge Lyonore Metal, and may be increased or decreased in size as needed.

A card today will send our catalog to you!

MARYLAND METAL BUILDING COMPANY
Engineers and Manufacturers
Race & McComas Sts. Baltimore, Md.

GEORGE DOWMAN

610-611 WALTON BLDG., ATLANTA, GA.

"DOWMAN SERVICE" IS KNOWN ALL OVER THE SOUTH. TAKE ADVANTAGE OF THIS SERVICE WHEN IN NEED OF ANY OF THE FOLLOWING:

FIRE PROOF DOORS
SOLID STEEL SASH
HOLLOW METAL WINDOWS
STEEL CASEMENTS
VENTILATORS
METAL CEILINGS
STEEL BUILDINGS
METAL LATH
STEEL FENCE
SASH OPERATORS
OVERHEAD CARRIERS
ETC.

SEND FOR CATALOGS AND PRICES

Pages—Quality Products plus "Dowman Service"

Pledged to Make an Organ of Free Public Opinion

A. B. P. Standard No. 3

"To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive."

THE publisher of this paper together with other members of the A. B. P., Inc., has subscribed to this Standard. He has subscribed to nine other standards also, covering every department of business paper practice.

Business papers of the class of COTTON do not just happen. They must be built upon a solid foundation of correct principles, and operated with skill, with intelligence, and with the interests of the field as a whole as the main objective.

We do not believe that a publication which is a personal propaganda sheet, or which is forced to function within the narrow limitations of one man's ideas and prejudices, can attain to the stature demanded by the progressive business and professional men of the country.

In any even there is no place for such a paper within the ranks of the Associated Business Papers, Inc. Our type of publisher must be open minded, quickly responsive to every need of his field, and faithfully report the news without bias.

He should not hesitate fearlessly to attack evils, and he should be just as ready to support every beneficial movement. He will not be content to merely reflect opinion, but he will have the capacity to crystallize and lead opinion in the right direction.

In short, Standard No. 3 means that the A. B. P. publisher must be the highest type of public servant—and he is.

THE ASSOCIATED BUSINESS PAPERS, Inc.

JESSE H. NEAL, *Executive Secretary*

HEADQUARTERS: 220 WEST 42nd STREET NEW YORK CITY

This Paint Costs Less Because it is Sold Direct to You

Surlight—mill-white paint—costs less because it is sold on a volume basis, direct to you, by one of the most soundly established paint companies in the Mississippi valley. Intermediate profits are eliminated and a good part of this saving is passed on to you.

Surlight has been on the market for over ten years—giving complete satisfaction because it is the only paint that actually *stays* white in service. It can be applied either with brush or spray—covers exceptionally well—holds up for a long period of time and gives unusually good service.

Try Surlight! See how well it covers and how long it lasts.

Sold only in bulk to large consumers

ST. LOUIS SURFACER & PAINT CO., 4211 Arlington Ave., St. Louis, Mo.

SURLIGHT

The Interior Mill White

For Mill Villages—
Try this Specially Prepared Paint

Millvill is a mill-village paint—developed particularly for this purpose by the same company that makes Surlight. It is marketed on the economical plan of direct selling from the factory to you—you get a good portion of the saving that is effected by cutting out intermediate profits.

Millvill is a success because it is made right, by a company established for more than 20 years—it covers exceptionally well, does not blister, check or peel even when subjected to varying weather conditions, and can be applied either with brush or spray. Millvill lasts long and is furnished in a wide range of colors. Write for prices and full particulars.

Sold direct to large consumers

ST. LOUIS SURFACER & PAINT CO., 4211 Arlington Ave., St. Louis, Mo.

MILLVILL

Paint For Mill Village Homes

PERMANENT ROOF CONSTRUCTION

A series of articles by the Technical Staff of the Richardson Research Laboratories, showing what modern science has done to perfect the materials and methods of roof construction

No. 4. How waterproofing bitumen is held fast to the roof

It is not enough that you obtain for your roof the very highest grade of waterproofing bitumen. All this will be wasted if you fail to secure also a material that will hold it in place *permanently.*

The right foundation is just as vital to a roof as to a skyscraper. To use a low grade felt or fabric as a base for your roof is precisely like building a house upon sand.

Just what is a permanent waterproofing base?

In solving this question, the Richardson Laboratories have profited by the fifty years of felt making experience gained in the mills of the Richardson Company. After putting this experience upon a technical basis, their present conclusion is this.

The best foundation you can secure for waterproofing bitumen is a felt which measures up to four different requirements, each one dependent upon the other. These four include proper absorptive capacity, tensile strength, flexibility, and uniformity. Proper weight and thickness, as you will see, are secondary to these principal requirements.

The back bone of waterproofing

In previous articles you have no doubt read how the Richardson Research Laboratories developed a pliant, adhesive waterproofing bitumen—Viskalt—exceptionally free from destructive elements, and absolutely impervious to water. But what is equally important, the Richardson felt base for Viskalt, through decades of service in many thousands of roofs, has proved itself truly *permanent.*

Compare for example, Richardson felt with other felt, according to the four requirements of a good waterproofing foundation.

First, note its absorptive capacity. A sponge, as you know, holds water in proportion to the air holes among its fibers. In like manner, Richardson felt is woven together on the felt machine to give the maximum capacity for bitumen.

Second, compare its tensile strength. A sheet of ordinary felt bulked with short fibers cannot resist strains on the roof. But Richardson felt is not loaded with inferior, short fibered stock. It is woven together on the felt machine in such a way as to give *both* ample capacity for bitumen and maximum strength as well.

Third, whereas ordinary felt cracks easily when drawn around projections, pipes and short corners, Richardson felt is as pliant as Viskalt itself.

Fourth, cheap felts are rarely uniform. Unbeaten lumps of rags or non-fibrous adulterants often leave weak spots in the roof. But careful screening and beating keep Richardson felt absolutely uniform and free from such defects.

Strength from billions of sinews

These four essential requirements are achieved by properly combining the fibers of which a sheet of felt is made. Wool fibers are durable and strong, but too much wool makes a felt fuzzy and too open. Cotton rags beat up into good fibers. In Richardson felt, however, these fibers are carefully proportioned so as to obtain a maximum of absorptive capacity, strength, flexibility and uniformity.

Only after a felt base measures up to these four requirements is weight and thickness a further indication of its quality.

These four tests, however, reflect more than exceptionally high quality in Richardson felt. Behind this quality lies over half a century of manufacturing skill—the concentrated effort of experienced men who take pride in constantly doing a good job better. Because you know how vital this feeling is in your own work, you can understand its genuine importance in the manufacture of Richardson felt—the foundation of Viskalt.

When, therefore, you specify a Viskalt Membrane Roof, you can be sure of two things:

(1) A pliant, durable, adhesive waterproofing bitumen, free from destructive chemical elements and absolutely impervious to water.

(2) A felt foundation which, in spite of severe weathering, will permanently hold this bitumen fast to the roof.

For further facts about the basic principles of permanent roof construction, consult the article for next month.

Viskalt is made by a firm backed by over fifty years of manufacturing experience. There is a Viskalt compound for every waterproofing need. For complete specifications just write the Construction Materials Division, Dept. 4-D

The RICHARDSON COMPANY
Lockland (Cincinnati), Ohio
Melrose Park (Chicago), Illinois New Orleans, La.

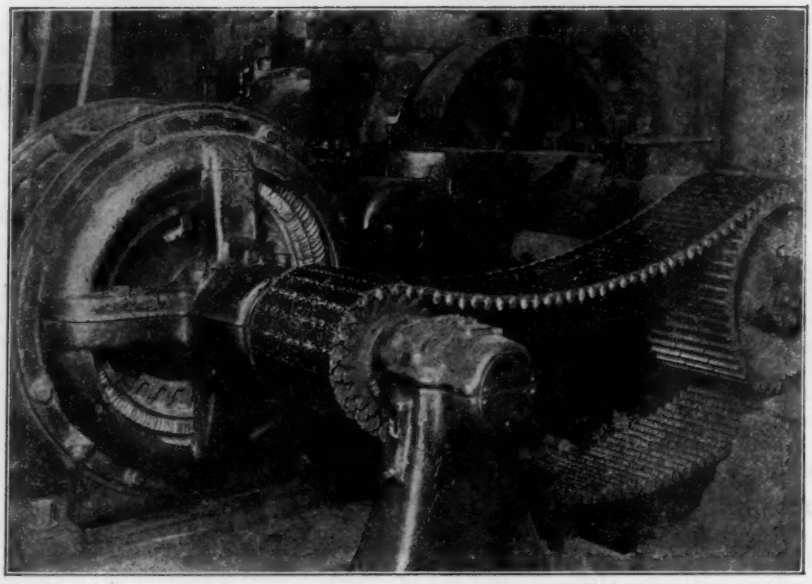
Viskalt
Pliant Under Stress

RICHARDSON *Product*
"1868"
From the makers of Richardson Roofing (including Flex-a-Tile Housetops), Viskote, Wall board and similar products

© 1923, The Richardson Company

MORSE DRIVES

THE MORSE "ROCKER JOINT"



for higher transmission efficiency in cotton mills

Morse Silent Chain Drives transmit 99% of power with positive speed ratios, uniform smoothness of operation and a minimum of upkeep. They require less attention than belt drives, and possess the added advantage of greater durability and flexibility of speed.

Morse Chain is transmitting power to machines of all kinds in cotton and textile mills. Morse engineers, with their wide experience in planning drives for your industry, can be of considerable help to you in the selection of the proper drive for each machine.

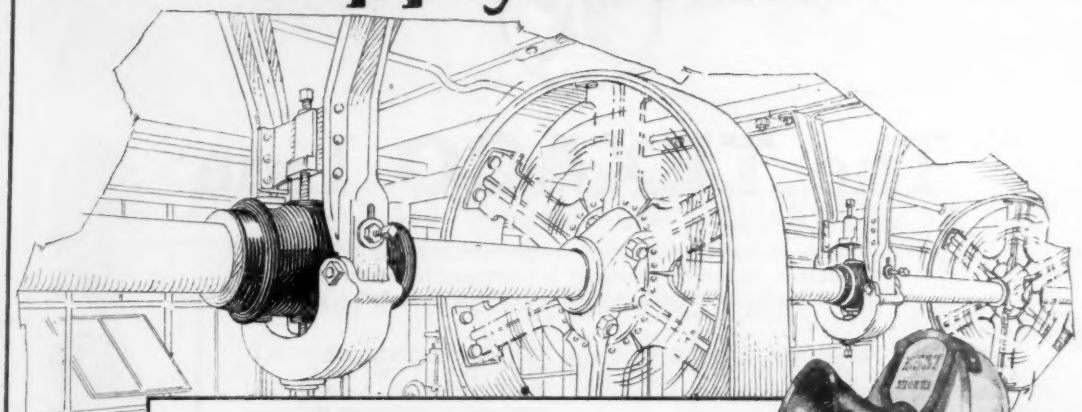
MORSE CHAIN CO., ITHACA, N. Y.

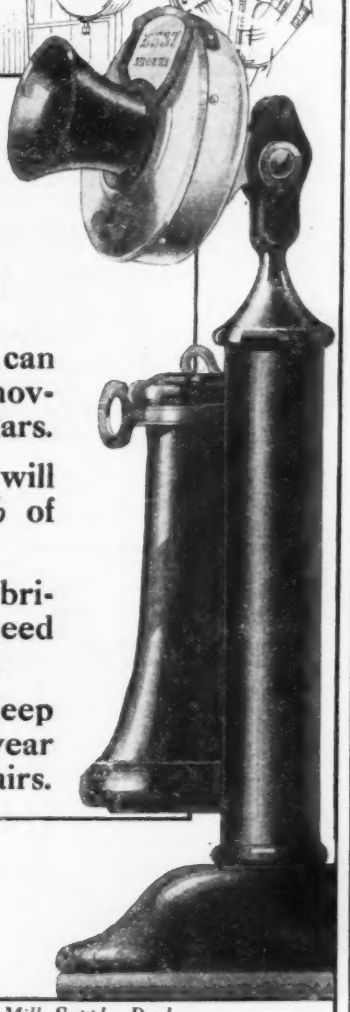
Address Nearest Office

ATLANTA, GA....Candler Bldg., Earl F. Scott & Co.
BALTIMORE, MD.....1402 Lexington Bldg.
BOSTON, MASS.....141 Milk St.
CHARLOTTE, N. C.....404 Commercial Bank Bldg.
CHICAGO, ILL.....Merchants L. & T. Bldg.
CLEVELAND, OHIO.....Engineers Bldg.
DETROIT, MICH.....7601 Central Avenue
KANSAS CITY, MO., Finance Bldg., Morse Eng'rg Co.
NEW YORK CITY.....30 Church St.
MINNEAPOLIS, MINN., So. 3rd St., Strong-Scott Mfg. Co.
MONTREAL, St. Nicholas Bldg., Jones & Glasco, Reg'd
PHILADELPHIA, PA. .....Franklin Trust Bldg.
PITTSBURGH, PA.....Westinghouse Bldg.
SAN FRANCISCO, CAL.....Monadnock Bldg.
ST. LOUIS, MO...Chemical Bldg., Morse Eng'dg Co.
TORONTO, Bank of Hamilton Bldg., Jones & Glasco, Reg'd
WINNIPEG, MAN., Dufferin St., Strong-Scott Mfg. Co.

"Morse" is the guarantee always behind the efficiency, durability and service

'Phone the nearest mill supply dealer!





Hyatt line shaft roller bearings with all their worthwhile economies are as near to you as your telephone.

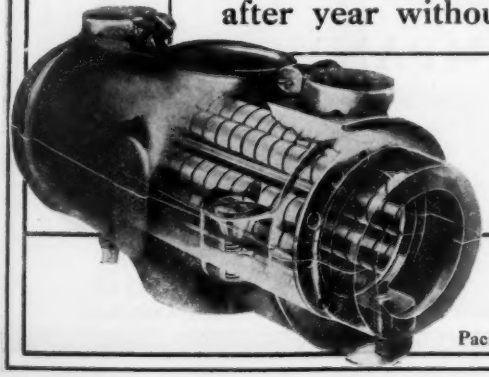
'Phone the nearest mill supply dealer to send you some Hyatt bearings for your line shafts and learn how quickly and simply they can be applied to your shafts without removing belts, pulleys, couplings or collars.

There are about 20,000 Hyatt line shaft roller bearings in the Ford plants—the first put in about 19 years ago are still giving excellent service.

Learn how they will save at least 15% of your total power.

Learn how they will reduce your lubrication costs at least 80% because they need oiling only three or four times a year.

Learn how Hyatt roller bearings will keep on working these economies for you year after year without attention or repairs.



Phone The Nearest Mill Supply Dealer

Hyatt Roller Bearing Company

Newark, N. J.

Pacific Coast Address: Hyatt Roller Bearing Company, San Francisco, Cal.

The TEXACO Line

Texaco Lubricants are carefully prepared to meet practical conditions and each lubricant is carefully tested in many plants before it is marked for the purpose intended.

TEXACO CYLINDER OILS
A grade for every condition of heat, pressure, character of water, speed, etc.

TEXACO ENGINE OILS

TEXACO TURBINE OILS

TEXACO MOTOR and GENERATOR LUBRICANTS

TEXACO ELECTRIC CAR OILS

TEXACO AIR COMPRESSOR LUBRICANTS

TEXACO TEXTILE MILL LUBRICANTS

TEXACO REFRIGERATING MACHINE OILS

TEXACO OIL and GAS ENGINE LUBRICANTS

TEXACO MACHINE OILS

TEXACO CUTTING OILS

TEXACO SOLUBLE OILS

TEXACO AUTOMOBILE LUBRICANTS

TEXACO CUP GREASES

TEXACO THUBAN COMPOUND
A lubricant for the gears of transmissions and differentials of automobiles and motor trucks, and for other light fast-running enclosed gears.

TEXACO CRATER COMPOUND
A heavy mineral lubricant for lubricating heavy gears, wire rope, chains, etc.

TEXACO GREASES FOR ALL PURPOSES

In short, we can furnish you with a scientifically correct lubricant that will increase the operating efficiency of any of your power units, auxiliaries and machines.

These lubricants are in use in numbers of the most carefully operated power plants, shops, mills, steam and electric railway systems, ships and shipyards, mines, etc., not only in this country, but throughout the world.

We shall be glad, at all times, to answer any question relating to the use or application of lubricants, and we would thank you to address inquiries to our nearest district office.

THE TEXAS COMPANY

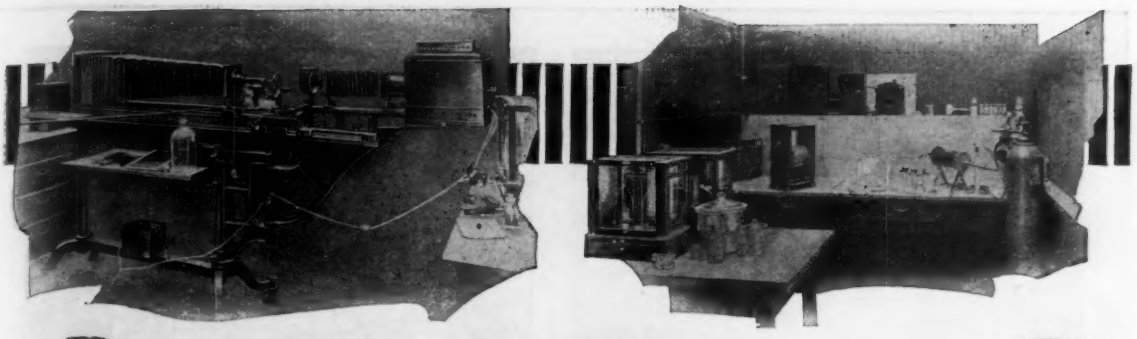
TEXACO PETROLEUM PRODUCTS

General Offices: Houston, Texas, and New York City

DISTRICT OFFICES:

Boston	Norfolk	Atlanta	Dallas
New York	Pittsburgh	New Orleans	Oklahoma City
Philadelphia	Chicago	Houston	Denver

Branches the World Over



Factors in Strom BALL BEARINGS Supremacy

No. 3—Testing Raw Material

To uphold the ideal of perfection in ball bearing performance, STROM laboratories have established very definitely the chemical and physical requirements for STROM bearing-steel. *And not a bar of steel may go into process unless it comes up to STROM specifications.* The most advanced methods for determining and verifying correct analysis, structure, heat treatment, etc.—all form a part of the routine check which begins with the receipt of the raw material and ends only with the finished product. Just another reason why STROM guaranteed ball bearings, for new or replacement work, leave Power unshackled—

"Wherever a Shaft Turns"

(1977)

Strom BALL BEARINGS

U. S. Ball Bearing Mfg. Co.
4544 Palmer St., Chicago

An Organization Built for Precision

Scientific in Principle and Practice

Fifty Large Cotton Mills Realize The Value of Hyatt Bearing Frames

The men responsible for the economical operation of fifty large mills throughout the country, realizing the advantages, have specified Hyatt roller bearing equipped, spinning and twister frames.

The advantages are—power saving, smoother operation, oil saving, durability.

Among the fifty mills securing economical operation of Hyatt roller bearing frames are:

Fairhaven Mills	New Bedford, Mass.
King Philip Mills	Fall River, Mass.
Narragansett Mills	Fall River, Mass.
Ninigret Company	Pawtucket, R. I.
Tecumseh Mills	Fall River, Mass.

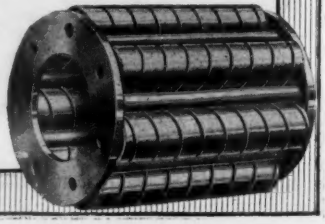
Power Saving: Tests under actual conditions show that Hyatt bearings save more than ½ H. P. per frame—at $30.00 per H. P. per year this amounts to $15.90 saving per frame per year.

Smoother Operation: Hyatt bearings make smoother running cylinder shafts, more uniform spindle speed—more uniformly spun yarn.

Oil Saving: Oiling Hyatt bearings four times a year instead of weekly saves at least 80% in lubrication costs.

Durability: The almost frictionless operation and the high grade steel rollers enable Hyatt bearings to operate properly throughout the life of a frame without adjustment or replacement.

These advantages can be secured for about $35.00 per frame. Include this important item in your frame specifications or write to us for more complete information.



Hyatt Roller Bearing Company

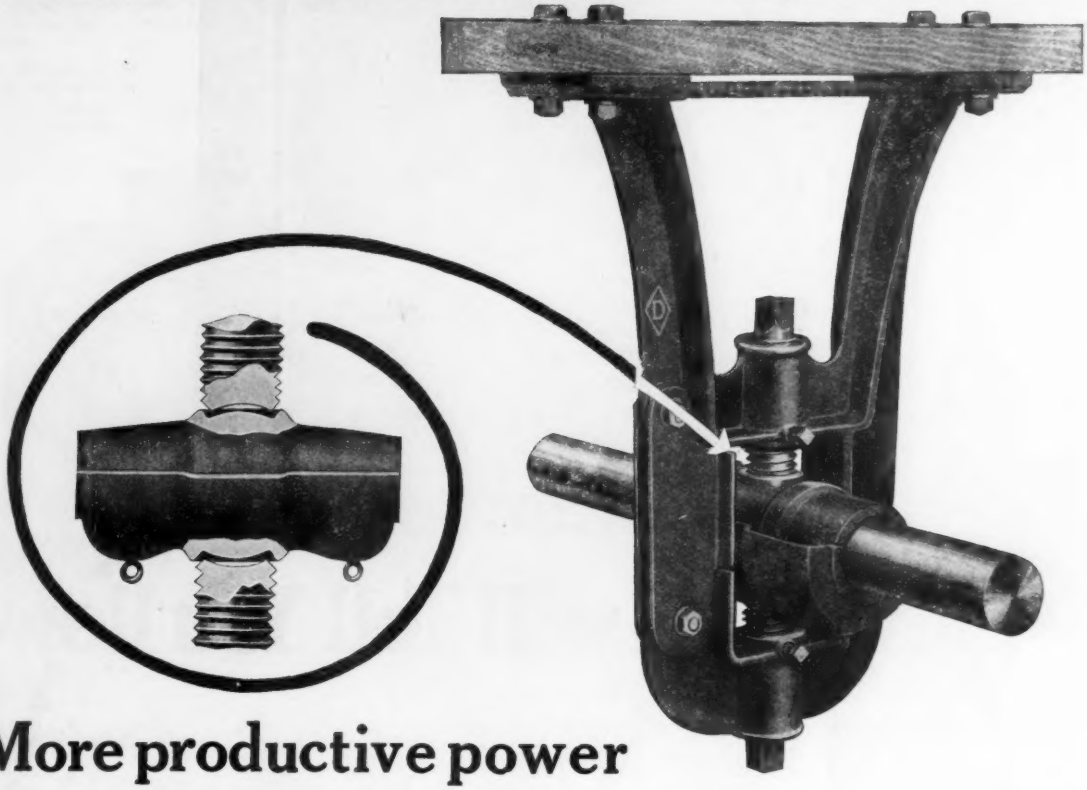
Newark Detroit Chicago San Francisco

Worcester Milwaukee Huntington Minneapolis Philadelphia

Cleveland Pittsburgh Buffalo Indianapolis

DODGE

POWER TRANSMITTING EQUIPMENT



More productive power

A shaft hanger must do more than support the shaft. It must be strong enough to maintain its alignment under constant shocks and vibrations and it should embody the ball and socket fitting of the bearing in the frame.

The Dodge hanger is constructed on the true ball and socket principle—the small cut illustrates this feature clearly. It is amply proportioned and designed for great strength without excess weight.

Forty years' experience in the design of power transmission appliances is your assurance of power savings and satisfactory performance.

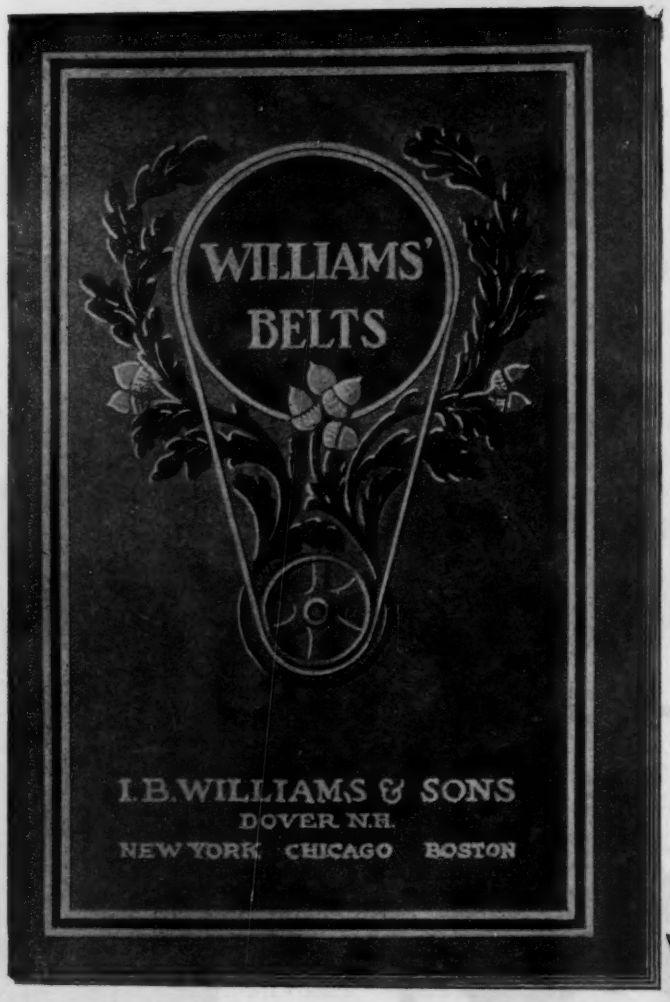
Buy Dodge power transmission appliances from your local dealer. He can make immediate delivery.

DODGE MANUFACTURING CORPORATION

GENERAL OFFICES: MISHAWAKA, IND. WORKS: MISHAWAKA, IND., AND ONEIDA, N. Y.

New York Philadelphia Pittsburgh Boston Cincinnati Newark Chicago Atlanta Minneapolis St. Louis Houston Seattle San Francisco

COCHECO BELTING



This Book will Tell You How-

To Find the Circumference of a Pulley.

To Find Speed of Belt.

To Find Length of Belt Required.

To Find the Horsepower Transmitted by a Belt.

To Find Speed a Belt Must Travel to Transmit Any Required Horsepower.

To Find Width of Belt Necessary to Transmit Any Given Horsepower.

To Find Diameter Necessary to Make Any Required Number of Revolutions.

Also gives rules and diagrams for Lacing a Belt, and other helpful information.

Furthermore, this handsome illustrated Book will give you particulars about Cocheco, Defiance, Buckeye and Shedite (water and steam proof) Belting which will result in greater and more economical production.

This book will be a valuable addition to your business library—Send for it *today*.

I. B. WILLIAMS & SONS

DOVER, NEW HAMPSHIRE

1416 N. FRANKLIN ST. CHICAGO, ILL.

71-73 MURRAY ST. NEW YORK, N.Y.

157 SUMMER ST. BOSTON, MASS.

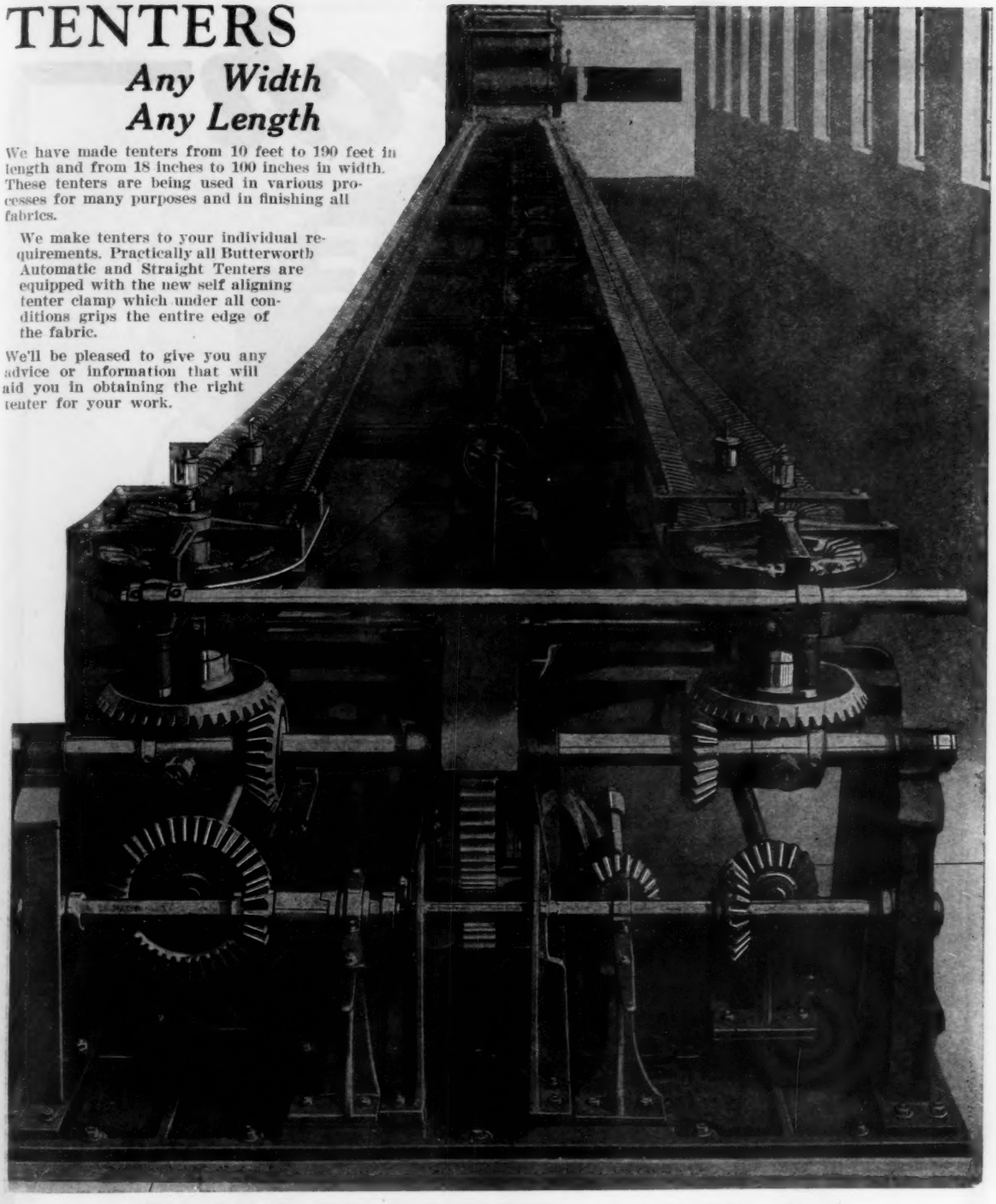
TENTERS

Any Width
Any Length

We have made tenters from 10 feet to 190 feet in length and from 18 inches to 100 inches in width. These tenters are being used in various processes for many purposes and in finishing all fabrics.

We make tenters to your individual requirements. Practically all Butterworth Automatic and Straight Tenters are equipped with the new self aligning tenter clamp which under all conditions grips the entire edge of the fabric.

We'll be pleased to give you any advice or information that will aid you in obtaining the right tenter for your work.



H. W. BUTTERWORTH & SONS CO.

Established 1820

PHILADELPHIA, PA.

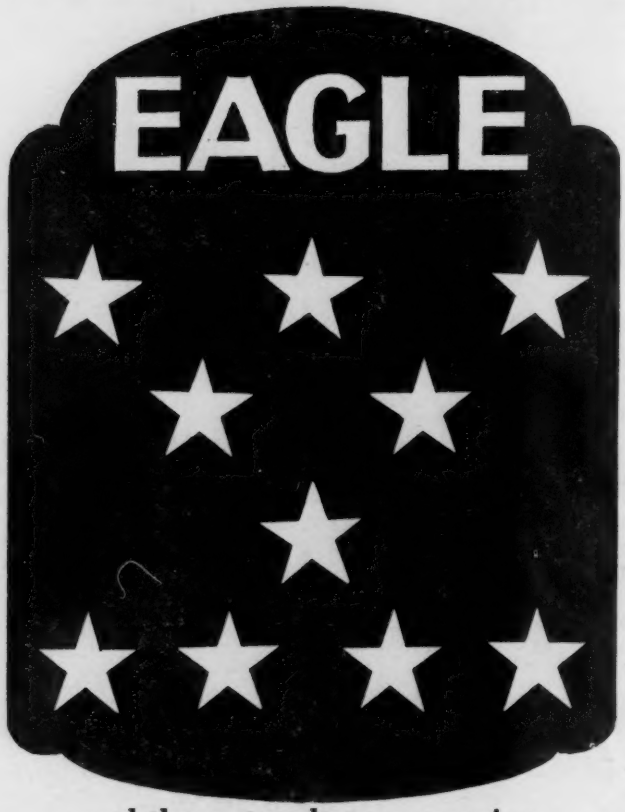
Providence Office
Turk's Head
Building.

SOUTHERN REPRESENTATIVE
Milton G. Smith, Greenville, S. C.

Canadian Representative
W. J. Westaway Co.
Hamilton, Ontario, Canada

BUTTERWORTH *Finishing* MACHINERY

Starch



—and these stars have a meaning—

They signify the different grades in which Thin Boiling Eagle Starch is offered to the textile industry.

Being the pioneers in the manufacture of **Thin Boiling Starches** we are gratified at the widespread recognition they have received.

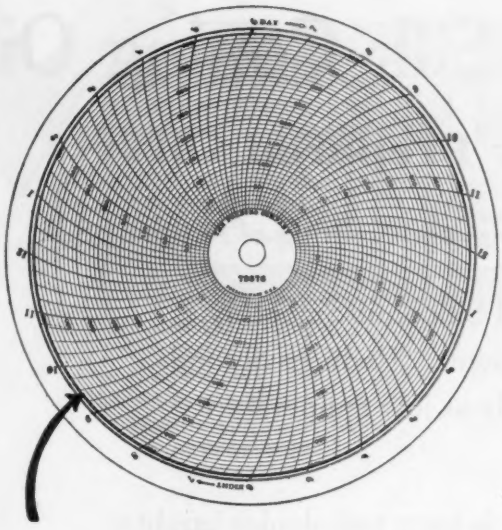
Be sure to select the best grade suited to your work. Our knowledge and experience are at your service.

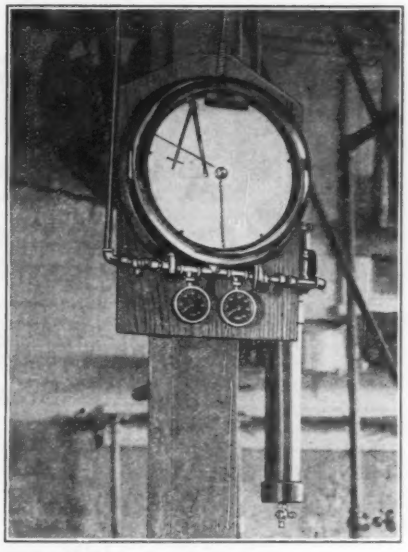
Corn Products Refining Company

New York

Southern Office *Greenville, S. C.*

Starch





Temperature Control at Maximum Range

The record produced above was taken from a Foxboro Temperature Recorder Controller installed on a petroleum still. It is a striking example of the accuracy and strength of the instrument.

The control lever was set at the maximum range of the instrument—400° F.—yet the chart indicates perfect control throughout the 24 hours.

Foxboro methods of design and construction make possible the same results day after day without the slightest weakening of the recording or controlling mechanisms.

Foxboro Temperature Recorder-Controllers are built for ranges up to 1000° and for every requirement as to location and type of bulb, source of heat, etc.

Their permanent accuracy and durability make them especially suitable for textile dyeing, sizing and finishing departments.

For complete information write for Bulletin AS-112-1.

Foxboro Temperature Recorder-Controllers are particularly adapted for installation on

Dyeing Machines
Dye Tubs
Bleaching Kiers
Slashers
Size Boxes
Kettles
Steaming Boxes
Drying Cans
Wool Scouring, etc.

The chart record provides an absolute check on controller operation. At the same time it furnishes the superintendent with permanent data that are invaluable in developing and standardizing processes.

THE FOXBORO CO., Inc.

FOXBORO, MASS., U. S. A.

New York Chicago Boston Tulsa Cleveland Pittsburgh
Philadelphia San Francisco Rochester Birmingham
Peacock Brothers, Limited, 179 Delorimier Ave.,
Montreal, Canada

FOXBORO

REG. U. S. PAT. OFF.

THE COMPASS OF INDUSTRY

5445

Hydroxy Art Silk Coning Oil

A Specially Prepared Oil

Used in the Coning, Winding, and Knitting of Artificial Silk.

Makes Artificial Silk Knit Smoothly.
Eliminates Breakdowns. Reduces Seconds.
Washes out easily at low temperature.

Therefore—
Dyeing and Bleaching is even and shades brighter.

Sample sent on request—no charge.

Developene (There Is no Just as Good)

Makes a rusty Black stocking turn deep Black.

Kali Chlorine Neutralizer

An anti-chlor—prevents tender bleached goods.

All chemicals for the Dye House—
All oils—Sulphonated—Turkey Red—
Neatsfoot, Olive, etc.

KALI MANUFACTURING CO.

1410 No. Front St., Philadelphia, Pa.
Sole Manufacturers of "Hydroxy Oils" Patented.

MATHIESON Chemicals

Service to Southern Consumers

THE location of our plant at Saltville, Va., assures prompt deliveries of Mathieson Chemicals to all points in the South.

Southern Textile mills save thousands of dollars in transportation charges every year by specifying "Eagle Thistle" Soda products.

Let us serve you direct from the works in both carload and less-than-carload quantities.

The MATHIESON ALKALI WORKS *Inc.*
25 WEST 43rd STREET NEW YORK CITY

PHILADELPHIA
PROVIDENCE

CHICAGO
CHARLOTTE

EAGLE THISTLE PRODUCTS

Deal Direct with the Manufacturer

Bicarbonate of Soda
Liquid Chlorine-Caustic Soda
Sesquicarbonate of Soda
Bleaching Powder-Soda Ash

When Chicago was Twenty-nine years old

our service to the Textile Industry was inaugurated.

A steady growth since that time is a result of having kept the customer's interests constantly in mind.

STARCH AND DEXTRINE

STEIN, HALL & CO., INC.

61 BROADWAY
NEW YORK

CHICAGO OFFICES & FACTORY:
2841 SO. ASHLAND AVE.

SOUTHERN OFFICE:
CHARLOTTE, N. C.

BOSTON PROVIDENCE
PHILADELPHIA TROY

QUALITY AND SERVICE SINCE 1866.

COTTON

Published Monthly by

W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga.

L. L. ARNOLD, Editor. R. W. PHILIP, Associate Editor.

Editorial and Advertising Departments, Grant Building, Atlanta, Ga. Subscription price, $1.00 per year; Canada, $1.50 a year; Foreign, $2.00 a year. Entered at the Dalton, Ga., postoffice as second-class matter.

Contributions to the columns of Cotton are solicited and paid for after publication. The name of contributors need not necessarily be used, but must accompany all manuscripts.

Orders for any change in advertising must reach Atlanta previous to the tenth of the month preceding month of issue, otherwise publishers cannot be responsible for changes.

When changing address, notify us, not the postmaster. Always give the old address as well as the new one.

Volume 87

Member Associated Business Papers, Inc.
Member Audit Bureau of Circulation.

Number 9

CONTENTS

EDITORIAL—

Must We Curb the Supreme Court?..... 725
The Ford Symptom 726

GENERAL AND TECHNICAL—

What Chinese Cotton Mills Are Doing 727
Cotton Mill Situation at Shanghai Precarious but Hopeful 731
Georgia Mill Men Meet at Atlanta 732
Report of the Cotton Committee 736
Nikko and the Jackass—A Second Modern Fable.. 739
Southern Textile Association Holds Summer Meet at Kenilworth Inn 741
The President's Address 742
The Southern Textile Industry Perpetuates Its Anglo-Saxons 743
Discussion on Carding 746
Report on Spinning 748
The Saturday Morning Session 751
North Carolina Mill Men Meet 754
What the Southern Mills are Doing 757
The New England Mill Situation 760
Cotton Comment 762
Notes About Men You Know 764
Intangibles in Manufacturing 767
An Old-Timer Says— 769

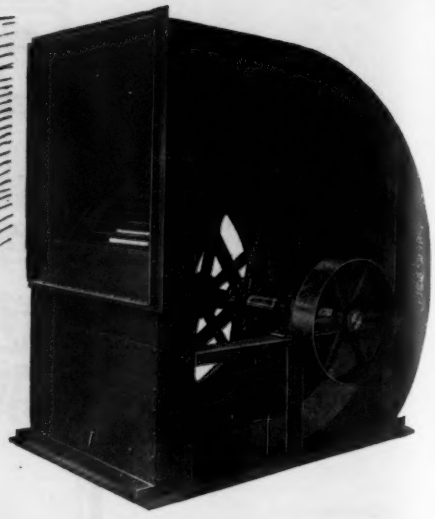
HOW OTHER MEN MANAGE—

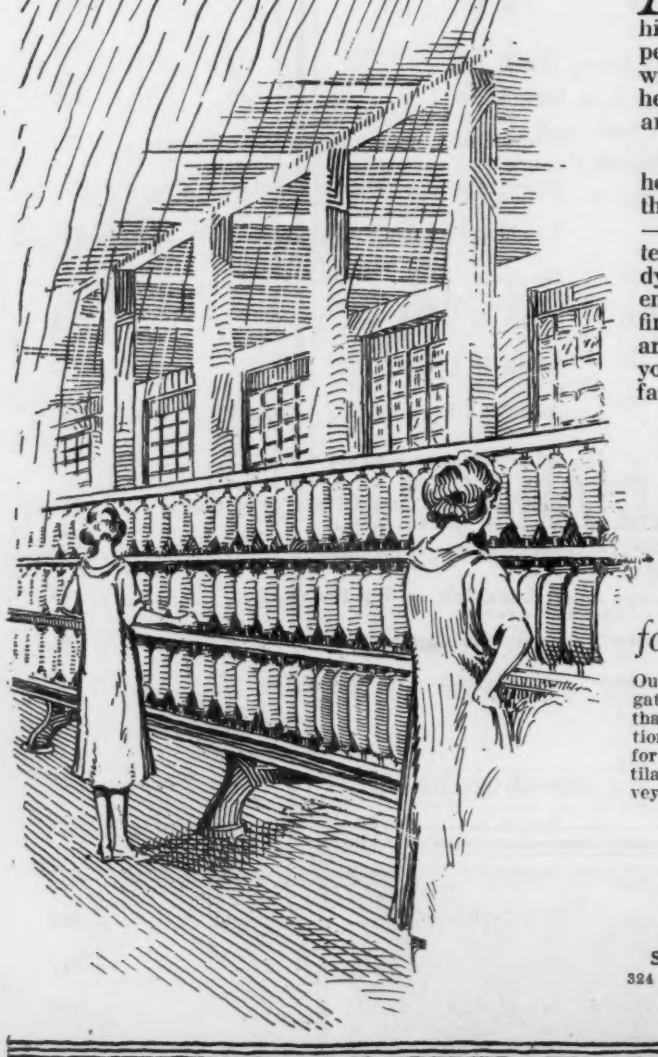
What Is the Best Possible Production on 50s Warp Yarn? 771
Lumpy Slubber Roving 771
Gear Speeds 773
What Is the Best Setting for These Cards?..... 773
Solves "Hoosier's" Slasher Problem 773
Finishing Pant and Trunk Linings 777
Do Spare Hands on Speeders Pay? 777
A Lay-out for 50s Warp Yarns 779
Regain in Cotton 781
Asks for a Square Deal 783
On Doing Your Best 785
New Method to Attach Picker Stick Checks 787
Thread Waste at the Slasher 787
A Little Talk on Fly Frames 788
Cards and Carding 791
The Function of the Job Analysis 794

KNITTING SECTION—

British Textile Progress in Knit Goods..... 797
Among the Knitting Mills 803
The Yarn Market 804
The Knit Goods Market 807
Where Do You Stand? 807

Back of every productive mill you'll always find perfect cooling and heating





ATMOSPHERIC conditions play an important part in the efficiency and productiveness of every department of the mill. Back of every highly efficient mill you'll find perfect ventilation—perfect cooling in the summer and heating in the winter. And back of every perfect cooling and heating system you'll find the most perfect fans and blowers—BUCKEYE.

In the Buckeye equipped mill you won't find a hot, oppressive atmosphere in the summer that stifles the employee's efficiency and cuts your production—you won't find a cold, numbing condition in winter that keeps them full of cold. You won't find the dye house filled with vapor that is injurious alike to employee, product and building interior. You'll find the correct temperature maintained the year around—maintained by a system exactly suited to your particular requirements—a system using the famous

BUCKEYE FANS and BLOWERS

for Cooling—Ventilating—Heating

Our engineers are at your service. You will be under no obligation by writing us for any information you desire or asking that an engineer call and investigate your particular conditions and advise with you as to the best equipment or system for your mill—whether it be a system of cooling, heating, ventilating, exhausting, condensation and vapor elimination, conveying of raw stock, lint, etc., or the drying of cloth.

We are glad to serve you, whether you buy or not. Write us direct or write or wire our Southern office.

BUCKEYE BLOWER CO.

COLUMBUS, OHIO

Southern District Office, 372 Whitehall St., Atlanta, Ga.

324 Monadnock Block, Chicago, Ill. 1400 Broadway, New York

101 Wabash Bldg., Pittsburgh, Pa.

With the Publishers—

JOHN H. McDONOUGH, PRESIDENT & GENL. MGR.
J. KIRBY McDONOUGH, VICE-PRESIDENT
CHAS. S. BARRY, SECY. & TREAS.
N. B. HENRY, CHIEF ENGINEER
The MURRAY COMPANY
MANUFACTURERS
COTTON GINNING,
COTTON SEED OIL MILL MACHINERY AND MILL SUPPLIES
ATLANTA, GEORGIA

June 5, 1923

COTTON,
Grant Building,
Atlanta, Ga.

Gentlemen:

Last fall when commencing to market the Murray Cotton Cleaning and Aerating Machine we decided to carry an advertisement in your trade journal. So far our sales of this machine have been very gratifying and we attribute no small part of the success to advertising in COTTON. Numerous letters received from mills indicate that the executives and superintendents read our advertisement.

We also wish to thank you for the assistance that you have rendered us in preparing our copy and the general cooperation shown by your entire organization.

Yours very truly,

N B Henry

Works Manager

In connection with the above letter it is of interest to note that COTTON is the only textile journal that has been used regularly since the announcement of the perfecting of this machine in the October, 1922, number. At that time but one of these machines was in operation in a cotton mill. In the seven months up to June 1st that have elapsed since that first announcement, the machines installed and on order number 57 located in or being made for 39 mills in 11 states.

It is an axiom that satisfied customers are the best proofs of success and COTTON and The Murray Company are proud of their achievements in their separate fields of endeavor.

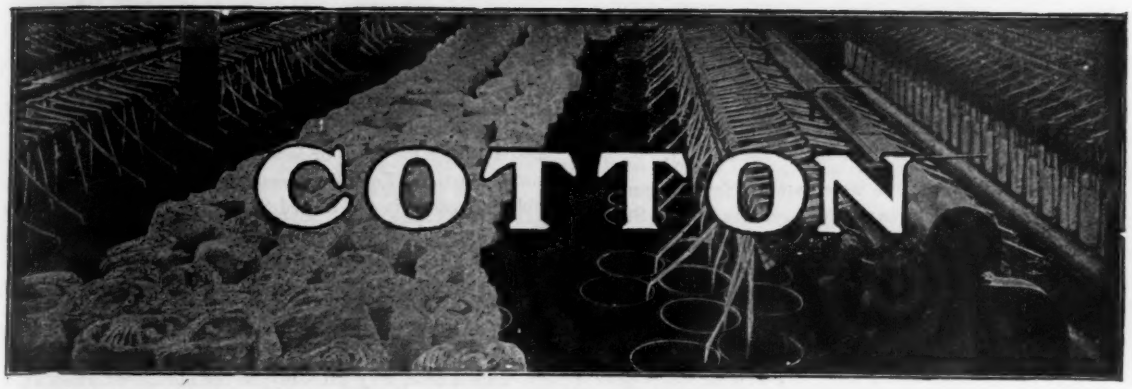
If you have a product that is of real value to the textile mills, the place to tell about it is in the pages of COTTON, the process and production paper depended upon by progressive mill men.

AMONG COTTON'S READERS

A. F. MacINTYRE, Agent
Fulton Bag & Cotton Mills
Atlanta, Georgia

"Away back in my Canadian days—about 1909—Treasurer Lowe, of the Montreal Cotton Company gave me a copy of COTTON, and since then I have been a constant subscriber, with uniform benefit to myself and those with whom I have been associated."

A. Ferguson MacIntyre



July, Nineteen-Twenty-Three

Must We Curb the Supreme Court?

It now seems that one of the biggest national political issues of the next year or two will have to do with the question of curbing the powers of the United States Supreme Court. Several decisions in succession—notably two having to do with attempts by Congress to regulate child labor made by close votes and holding adversely on the constitutionality of so-called "popular" measures have brought this old subject again to the fore.

The discussion is as old almost as the Supreme Court itself. It began concurrently with the Court's holding that it had the power to pass on the constitutionality of acts of Congress. This is a tremendous power. It frequently gives to one man, as in a case where the Court's decision is by a four to five vote, the right to override both the legislative and executive branches of the national government. And by a man whose actions are beyond ordinary review, either by the voters or their representatives.

Yet for more than a hundred years Congress, though constantly protesting, has not attempted to curb this power, as seems clearly to be within its right. For in all but primary status, the Supreme Court is a creature of Congress, which fixes the Court's numbers and many of the most important of the rules having to do with its procedure. The Constitution makes even the Court's appellate jurisdiction, both as to law and fact, subject to "such exceptions and under such regulations as the Congress shall make."

Thus it seems clear that whenever Congress wishes to do so, it may withhold from the Supreme Court the power to pass upon the constitutionality of any or all of its acts.

But scarcely any of the present critics of the Supreme Court as now conducted advocate Congress' going that far. They are urging the adoption of a constitutional amendment requiring that no Congressional act be declared unconstitutional except by more than a majority of one vote upon the part of members of the Court. Generally they favor making it so that at least seven of the nine members of the Court shall declare an act unconstitutional before that view shall hold. Many able lawyers, among them Senator William E. Borah, contend that a constitutional amendment is unnecessary, that the same end can be achieved by statute.

It is well to emphasize that virtually all agree that the Supreme Court should possess, in some form, the power of passing on the constitutionality of Congressional acts.

Otherwise it would be within the power of Congress to amend the Constitution by simple statute, which would mean, in substance, that we no longer would have a written Constitution. Any law that Congress enacted then would be constitutional and be subject to review only by the voters. In fact, the English parliament does possess such power but the weight of tradition, which comprises the British constitution, puts very severe restraint on the law-making body.

Tradition counts for little with the American Congress, which has grown less and less discriminating concerning the Constitution. This is because where an obligation is shared the natural tendency is to pass it along to the last agency having power in the premises. There are members of Congress who have contended that it is not their business to say whether a proposed measure is constitutional. They hold that that is the business of the Supreme Court. Many have voted for so-called "popular" measures in the hope that they would be annulled by the highest court.

Whether a curb on the Supreme Court, or even the withholding from it of the right to construe the Constitution, would cause Congress to exercise more discrimination is extremely doubtful.

As recently pointed out by Frank Cobb, editor of the New York World, with all the average American's lip-worship of that great instrument, he knows little of the true nature of our Constitution. It is difficult for him to realize that what appears to be "right" may at the same time be unconstitutional. Neither does he realize that to do an apparently right thing by unconstitutional process means letting down the bars to an onrush of off-setting wrongs. He also is inclined to forget that the Constitution provides ways for achieving anything which the public truly wants to be done—even to the complete annulment of the Constitution itself.

And the average American also is prone to forget that virtually every close decision made by the Supreme Court has been against the tendency of the government to reach out steadily for more power. The majority of these decisions have sustained in some way the ancient rights of the States or of the individual against governmental encroachment.

The decisions on the child-labor acts clearly were on behalf of State rights. These acts were aimed at a single section of the country, the South. They had to do with a

subject well within the jurisdiction of the States and generally handled by the States. Whatever the primary merit of Federal Government interference in the matter, for it to have been permitted would have meant that in the future other sections might combine to exercise like species of tyrany over other minority sections of the country.

If a seven to two vote were required for the annulment of Congressional acts any three members of the Supreme Court then could sustain anything Congress and the President might do. In recent times nearly every President has had occasions to appoint three or more members of that court. Assuming that this usually will be the case in the future, such an arrangement would make it possible for any President to so "frame" the Supreme Court as to make it certain that any kind of acts favored by him would be sustained.

What the makers of the Constitution had in mind when they provided that members of the Supreme Court should have life tenure was that this tribunal must be reasonably free from passing prejudices, passions and temptations. Whatever may have been its other faults, no one yet has had genuine excuse for accusing the Court of venality or cowardice. It steadily has grown in popular respect if not in all-round public esteem. And no such inclusive tribute can be paid to Congress, or, fully, to the Presidency.

Of course to permit great decisions to be made by a majority of one naturally injects an element of chance into the process of construing the Constitution. This is shown by several important cases in which the Court at different times has reversed itself.

But if we judge it by the record of the past, the chance seems to weigh heavily against usurpation of power by the government. It is much better that Congressional acts be invalidated wrongly than that unconstitutional ones be sustained. For, as set forth before, a negative decision on the part of the Supreme Court can be overcome, if need be, by constitutional amendment. It is very difficult if not impossible to overcome an affirmative one, no matter how dangerous it be.

And the proposed change would merely increase the chance of any sort of Congressional act being sustained. With the archives of the past before us, this would seem to be a highly dangerous procedure.

The Ford Symptom.

The historian of the future probably will record the present "Ford movement" as one of those curious cross-currents of American politics which have so puzzled foreign students of our life. There have been many of them; for example, the Anti-Masonic wave of sentiment in the early part of the last century, the Know-Nothing movement just prior to the Civil War, and the Greenback and Populist upturnings of the last half century.

Each of them caused much excitement, all cut considerable figures when at their height, none fully succeeded but all had deep effect on subsequent politics and history.

Rarely have these curious cross-currents in American politics been given correct diagnosis, which would rate them as symptoms rather than as solid entities. They are not the product of free expression but quite the contrary. They grow out of the extreme difficulty of giving political expression in this country to something not connoted within the more or less narrow bounds of the established parties. For of all countries in the world, it probably is hardest in the United States for a brand new sentiment widely held to gain full and free expression through the regular channels of politics. Being forced into the more or less irregular ones, it usually becomes distorted, and takes on a cast quite different from that pertaining to its underlying cause.

This is true, very probably, of the movement which aims ostensibly at making Henry Ford the head of the nation. It is not inspired by any reasoned-out belief that the manufacturer is capable of successfully directing the government. It is due to a feeling that of all men of his type he would be most likely to conduct it successfully.

And it is the type rather than the man, which, for the moment, wins fervid support from a startling proportion of the public.

The type makes appeal chiefly by contrast. It, particularly as represented best in the popular mind by Henry Ford, has done things and, in his case especially, has done them well and in a sense marvelously. But the contrasting type, that of the politician, hasn't; in recent years it has failed as perhaps never before in the history of this country.

Thus the failure of the politicians accounts more for the Ford boom than does even the imaginative appeal made to the popular mind by the business record of the flivver king. In the ranks of the politicians the public at present can see no figure that has risen or gives assuring promise of rising to the demands of these peculiar times. Thus it is prone as never before to turn to the non-politician for political leadership. This feeling is abetted by the presence of a seemingly miraculous non-political figure in the form of a man who has done what seemed to be the impossible. A great portion of the public turns toward that figure, not so much, it may be, in the belief that it can or even should be raised to the loftiest place in American public life, but more as a threat and a warning to the politicians who have failed.

It must not be forgotten that no man without either political or military experience has ever been elected president of the United States. It is one place in filling which the American voter always has demanded some measure of specific and pertinent training on the part of serious applicants. Thus the voters' present seeming turning to a man without any record in official life gives melancholy illustration of the deplorable shortage of real statesmen now prevailing in these United States.

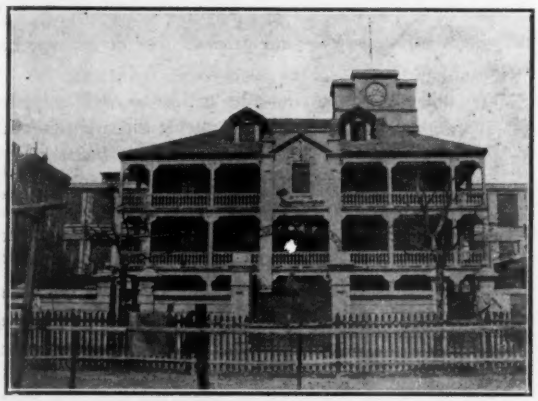
The Ford movement, therefore, is symptomatic. It may serve a good end—it may arouse some measure of outstanding statesmanship in national affairs and may bring to the front men who are trained and at the same time capable of meeting the demands of the times.

Anyway it is throwing a scare, such as they have rarely had before, into the politicians.

What Chinese Cotton Mills Are Doing

BY BEN Y. LEE.

The year 1922 was not a successful one as a whole for the mills of China; in fact, it was generally declared one of the worst years of a decade. The business was fairly profitable during the early part of the year, but in May came the Civil War in the North, which caused a great depression in the yarn markets all over the country. As a rule, coarse yarns, from 10s to 16s, are produced, and these are consumed entirely by the farming and laboring classes, and when these people are in distress, the yarn market is adversely affected. The price of yarn has fluctuated as much as 15 taels in one month, and even as much as four taels in one day; and cotton has fluctuated as much as five taels in one month or even one tael in one day, during the latter part of the year, which naturally caused much speculation on the part of the mill-owners and other factors. A tael is equal to $1.40 Mex. or 70 cents gold.



A PORTION OF PAOCHENG MILL NO. 1, SHANGHAI, WITH 88,000 SPINDLES AND 400 LOOMS.

All the principal factors contributing to the violence in fluctuation of the yarn and cotton markets in China will be pointed out as clearly as possible in this article, which could not have been written with any degree of comprehension before the end of the year, as the price of yarn went up four taels, or about $5.50 per bale, and cotton, one tael, on December 27th between the hours of 10 A. M. and 4 P. M.

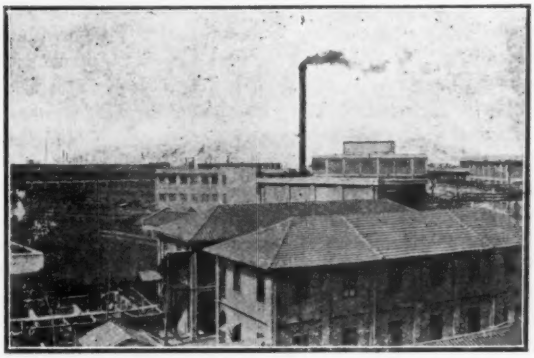
Of course the price of yarn and cotton in China is governed by supply and demand, as in any other country. China's total crop of cotton per annum, roughly speaking, is ten million piculs or a little over three million bales of 500 pounds each. (A picul equals 133⅓ pounds.) Her total spindleage is a little over two million. In rough figures, each spindle consumes about one bale of 500 pounds, 14s yarns taken as an average, thus making a total consumption of a little over two million bales, leaving about one million bales for export and other uses.

Whenever the crop is good in either America or India, the price of Chinese cotton is cheap, and vice versa. During last year and also in the early part of this year, the price of Indian cotton was about four or five dollars per picul cheaper than Chinese cotton, and this explains why China imports a great quantity of Indian cotton from time to time.

Besides the demand for yarn, the price of Chinese cotton is governed by the supply and demand of American and Indian cotton as well as its own supply and demand. In buying, one must look backward, forward and both sides before he leaps. In the latter part of September the price of Tungchow dropped to 26 taels per picul as compared with 40 taels per picul at the close of the year, thus making 14 taels or about 20 dollars higher per picul of cotton.

Roughly speaking, it takes three and a half piculs of cotton to make one bale of yarn, thus making the cost of the material for a bale increase $70 from September to December. But during the corresponding period, the price of 16s yarn rose from 121 taels to 145 taels or a little less than $35.00 per bale. And many believe the price of the raw material will be higher in the future. This depends a great deal upon the Indian cotton. The problem is a serious one and it remains to be settled. Perhaps when this article is published, the whole situation will be upset.

Japan is the chief buyer of Chinese cotton as her supply of raw material depends entirely upon either Chinese or Indian. In the first six months of 1921 Japan imported 237,410 piculs of Chinese cotton valued at over ten million yen, and the last six months of the same year she imported 323,074 piculs at a value of nearly fourteen million yen.

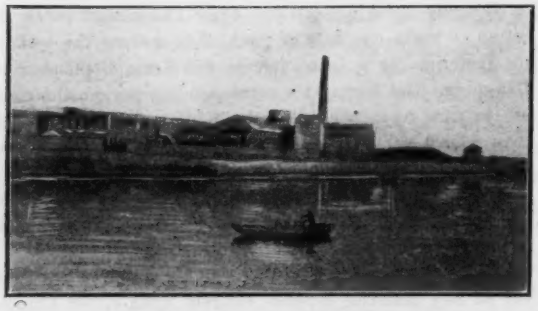


PAOCHENG MILL NO. 2 AT SHANGHAI WITH 61,440 SPINDLES.

The demand for Chinese raw cotton today is not confined to Japan alone, however. There is a strong inquiry as well from America, for in October, 1922, America took 25,889 piculs against Japan's 57,172 piculs. England took only 2500 piculs. It almost looks like that Japan will take more Chinese raw cotton this season than she did in 1921 and 1920. In this connection it must be mentioned that in 1919 Japanese mills bought practically the entire bulk of China's crop. The figures are interesting. In that year, out of 1,072,040 piculs that China exported, Japan took no less than 912,897 piculs at a value of about 30 million yen, while the United States took 112,050 piculs valued at nearly three million taels or a little over $4,000,000 Mex. The Tungchow cotton of about ⅞-inch staple is being exported

in great quantity to Japan, as the Japanese mills are apparently taking advantage of the cheapness of Chinese cotton and storing it. Chinese cotton at today's price is cheaper than American or Indian cotton, and the large export that is going forth can be ascribed to this factor. The steady purchasing on Japanese account has caused the Shanghai cotton market to rise, and maintain a steady tone. This also explains why the price of Chinese cotton goes in sympathy with the price in American markets.

In the absence of an agricultural department in this country, it is impossible to state with any degree of accuracy the exact nature of the cotton crop this season. All estimates are always mere guesses. It is quite possible that the present crop is just as large as that of last season. At any rate, the chief reason that causes the high price of Chinese cotton is the short American crop. Of



PAOCHENG MILL NO. 3 AT TIENTSIN WITH 51,072 SPINDLES.

course, this year China has more spindles in operation than last year, which is another factor to make the steady tone of the cotton markets. Fighting or threatened fighting between generals in the various provinces has caused merchants to delay in buying yarn, and selling cotton. Bandits are plentiful in the Central Provinces, which disturbs communication. The farmers find that it is safer to keep cotton in their homes than money, as the cotton is not so easy to take away by the bandits as the money. Many believe that the Chinese farmer is not the sort of fellow to keep back his stocks at the beginning of the season, as he has to pay off the loans he had contracted. There may be some "Chinese puzzles" concerning the supply of raw cotton, but nevertheless the arrival of cotton in Shanghai is very scanty—many mills couldn't get deliveries on orders placed months ago—which causes many cunning dealers to put extra water in their goods. Some bales tested have been found to actually contain as much as 20 per cent water, which makes it difficult for some mills to spin their yarn. In ordinary times, Chinese cotton contains 11 per cent water, which is already 1.5 to 2 per cent excessive, while the Indian cotton has 7.5 per cent or an excess of between .2 and .8 per cent. The actual cost of cotton is more by ten per cent than what is received on account of the excess of water.

At the time of writing the total cost of raw material per bale, 16s yarn, is about 135 taels, besides overhead charges, etc., while the price of the yarn is only 145 taels per bale.

The yarn market has been in a very bad condition since the fighting in North China last May, and there is little sign of improvement. The situation of the mills is worse than in previous months as the rise of 12 taels per bale in yarn does not cover an increase of five taels per picul of cotton. The political conditions of the country are still unsettled, as there is civil war pending in many provinces among the rival generals. During the summer, floods have done great damage in Swatow and Chekiang provinces, thus making thousands homeless and without food. Yarn dealers in the interior are naturally in dread of storing stocks, and also those in Shanghai won't be bold enough to buy the commodity for shipment to various parts that are run by brigands and undisciplined soldiery. There is belief that a very big business may be done in the interior, but the danger attendant upon the safety of the merchandise is so great at the present moment that there is little hope of witnessing any big change for the better.

The price of Chinese yarn also fluctuates in sympathy with the Japanese market, to a great extent. The business in general in Japan during the latter part of the year was very dull, which also caused a dull yarn market. The Chinese yarn dealers' association and speculators look for the American quotation on cotton the first thing in the morning, then at the Japanese yarn market, and lastly at the demand from the interior, besides the price of Indian and native cotton before the yarn price is fixed or the material bought.

The table accompanying this article shows the prices of Tungchow cotton and 16s yarn during the twelve months of 1922. The figures in the table represent taels.

	COTTON		YARN	
	High (Taels Per Picul)	Low	High (Taels Per Bale)	Low
January	34.50	33.50	155.50	145
February	34	33.70	151	145.50
March	35.50	33.40	153	147.75
April	35.50	34.50	153	145.75
May	35	32.25	148.25	144
June	35.50	32	144	140.25
July	32.50	31.50	141.50	139
August	31.75	28.50	143	133.50
September	32	26	135	122
October	28.60	26	132	124.50
November	33	30	135	131
December	40	33	145	133

The increasing price of yarn during the last weeks of the year was the result of the dearness of the raw mate-

A SPINNING ROOM IN THE PAOCHENG MILLS.

rial, but perhaps not especially due to demand. If the demand is not large enough to sustain prices it would naturally follow that values must decline. The situation as far as the mills are concerned is still not good. In the meantime, mill owners are expecting to see higher prices of yarn as raw material is steady and shows no sign of declining. On account of high price in cotton the low price of yarn and also the non-arrival of cotton in Shanghai, on December 8th, the Chinese Millowners' Association, com-

prising nearly all the mills in China, passed a resolution to reduce their output by 25 per cent. The agreement was okeh and is being carried out by the members. Some stop their night-shifts, some stop so many days per week, and still others stop every other night shift. Some mills have an insufficient cotton supply and stop more than the 25 per cent agreed upon.

This is the first sensible attempt that has been made to handle the serious situation in the cotton mill industry in

A REELING DEPARTMENT IN THE PAOCHENG MILLS.

China, although it should have been done as far back as last September. It will or may help to maintain prices, at present levels at least, although it surely is not the only remedy that can remove the trouble with which the mills are faced. Various factions have been at work to make the lot of the Shanghai mills a very unhappy one. The price of cotton has appreciated to a point where it is practically impossible for the local mills to make purchases, as manufactured cotton yarn is retailing at values that, in terms of the present prices, are really a loss of from $15

BUNDLING THE YARN AT PAOCHENG.

to $30 per bale of yarn produced in the mills. This is only an attempt to improve the yarn market externally.

The reorganization and introduction of modern systems of management into the mills is being driven into the heads of many mill managers as the result of high priced cotton and a dull yarn market, which really means the survival of the fittest. During the past few years mills have been making enormous profits with old methods and inefficient management, and many managers never have thought that any methods better than those they were using had been worked out. New mills, and old mills with additional extensions, were in progress during the past few years, and men without much practical or special training have taken important positions in these mills and the result is obvious. Not only the officials of the mill but also the Number One men, the fitters, and machinists—all incapable, inexperienced, and undisciplined—have "helped themselves" in power. Nominally, the manager manages the mills, but in reality a gang of ignorant men control the whole situation. These men recommend whom they please, and fix their wages as they see fit. Many mills have no rules concerning the management of the inside affairs of the mill.

Taking 16s yarn as an example, a well managed mill can produce as much as a little over a pound in 24 hours, while the poorly managed plants sometimes produce as low as .6 of a pound; nearly 50 per cent difference. The wages per 10,000 spindles in some mills are over $10,000 per month, while others may be as low as $7,000. The overhead expenses, including insurance, interest rate on capital,

JAMES LIU, MANAGER OF THE PAOCHENG COTTON MILLS.

etc., per bale of 16s yarn in some mills reaches over 30 taels, while others may be as low as 25 taels. Roughly speaking, the difference in profit and loss between a well-managed mill and a poorly-managed mill may reach as much as three quarters of a million dollars a year for 40,000 spindles.

In the last analysis, the cotton mill business is quite safe provided one knows what he is doing. The trouble here is that most of the men higher up are not in this class. They are either officials or semi-officials, whose ancestors may have been governors or some other kind of magnate. The real qualification for managership or its equivalent is not so much the experience or education, but rather some mysterious X or Y qualities. It is almost next to an impossibility for a man to secure one of these positions unless he possesses magic or hidden things. This is explained by the fact that some managers scarcely walk inside of their mills nor dare to discharge a machinist.

The condition of affairs existing in these mills cannot attract sympathy or active interest from either native or

foreign investors and capitalists. Some mill owners have been dreaming that the good years like 1919 and 1920 will return again. Some had ordered machinery for extensions while others had planned new mills, hoping that the future would take care of itself.—

But, lo! Look at the yarn market!

Some mills have succeeded in getting Japanese loans, while others have gotten mortgages from native capitalists. Should the present dull market continue for another half year or longer, many will be in bankruptcy. Some of the older ones which have been making enormous profits in past years can endure to suffer more loss. Loans to Chinese mills with a return of between eight and ten per cent interest can be easily obtained. The Japanese are wisely taking to this profit making business. There is no reason why the American investors and capitalists should not study this problem more seriously and get good returns on their money; it's a safe and sound investment. They should get more facts and correct information concerning such a business. As soon as one grasps the "nutshell" of this game, then he may enjoy it and lead others to do so.

There is a common saying in China: "Whenever the full moon is shining, the candle-light loses its brightness; when the breeze comes, the fan loses its real value." This is a daily philosophy adhered to by many mill owners. During the prosperous years between 1918 and 1922, they didn't care what type of men they employed or how the mill was managed. They could make more profit than they had hoped for, anyhow.

Being well grounded with a thorough knowledge of modern mill management, however, and also having realized the wrong steps taken by many mill owners, Mr. James Liu, recently returned from the New Bedford (Mass.) Textile School, whose father owns four mills which have approximately 200,000 spindles, has initiated a reform and reorganization policy in these mills along a scientific and efficient line of management and has changed them into a money-making proposition. This young manager-in-chief, not being satisfied with his present knowledge, now visits American cotton mills and looks for more and better methods of up-to-date management. He has employed two American textile experts to install all-American ways in his mills. No relatives or close friends are employed inside his mills, which is an exceptional case among the Chinese. Wages have been cut down to the minimum and the production is up to the maximum. Daily (24-hour) production of 16s yarn is over one pound per spindle, and on 10s yarn over 2.2 pounds, which is one of the highest records in the mills of Shanghai. The overhead expense per bale of yarn is about five taels or $7 lower than many mills.

He hasn't performed any miracles, either. The right men in the right places, and decreasing expense and overhead charges and increasing production—is the whole matter in a nutshell. "Squeezing" (a Chinese equivalent of American "grafting") is a common practice all over China; it is absolutely unknown in his mills. He is a pioneer in this revolution; he does what is right in a business way, fearing no one. Many other mill managers are considering following his footsteps, but they lack either the initiative or the nerve. At any rate, everyone in the cotton mill business in this country knows what has been done in his mills, as facts and figures cannot lie.

The cotton mill industry in China, if honestly and scientifically managed, might, even during the so-called dull periods, yield on the average more profit than the so-called sound investments in America. Taken as a whole, shareholders in American cotton mills would be tickled to death to receive ten per cent dividend annually, while the Chinese investors might murmur against Heaven and Earth if they received that small amount per annum. The history of the cotton mill development in China has shown us that even before 1917, most mills had made a fairly good profit, although they didn't know what they were doing at that time. Since 1917, up to the present time, the average Chinese mills, not to mention the Japanese and British mills, have been declaring annual dividends of from ten to one hundred per cent. Even in 1922, the so-called bad year, many mills made fairly good profits. The interest rate is so high in China that if investors should receive ten per cent annually from the money invested in their mills, they would say they lost money, while Americans and foreigners would be glad to receive such a rate. Japanese and British are already here, established in many mills, and are receiving good returns. There is no sensible excuse for Americans to stay at home and look aloof.

The China Trade Act has already passed in Congress, providing Americans doing business here partial or total exemption from the American income taxes. Americans have a new and effective medium for spreading out commercially, industrially and financially, in China. With such a stimulus it is expected that numerous new American enterprises will be attracted to China where it will be now possible for them to do business on a firm, solid, healthy foundation, and that a large amount of Chinese capital may also be invested in American business enterprises. It is hoped that there will be a growing tendency of American capital to find investment in the Celestial republic, which will have a favorable effect on the business, industrial and other relations between the two countries.

Uneven warper beams are a source of a large amout of waste, as is evidenced in the discussion on this subject at the divisional meeting of the Southern Textile Association and in other meetings. Of interest, therefore, is an effort made by the Draper Corporation, Hopedale, Mass., tending toward the elimination of this waste.

The step by this company consists of a fluted cylinder for warpers, which also performs the measuring operation, and the Rhoades-Saulnier device, which is designated to automatically lock the warper shipper mechanism when tripped through the action of the warper clock, in order to prevent an overrun of yarn on the beam when full yardage has been registered. The device acts only when the yardage has been attained for which the clock was set, it is stated, and does not interfere with the starting of the warper from stops due to broken yarn.

The accuracy of the fluted roll in other processes is well known, and the theory of applying the fluted cylinder to the warper is that the mass of yarn on the beam, being relatively yielding under the weight of the beam and its load, sinks into the longtitudinal grooves on the cylinder, producing in effect a positive drive between the cylinder and the warp beam. This driving of the beam by the cylinder, which also operates the clock, combines to reduce the possibility of discrepancy between the number of yards registered and the actual length of the warp on the beam.

Cotton Mill Situation at Shanghai Precarious but Hopeful

An American Viewpoint on the Situation so Fully Discussed by a Chinese Writer in the Preceding Article

According to a report recently received by the Department of Commerce from its representative, Trade Commissioner Lansing W. Hoyt, of Shanghai, China, the primary cause of the present unsatisfactory financial condition of most cotton mills in China is undercapitalization. With a total investment not exceeding 50 million gold dollars China had succeeded during very prosperous years in setting in motion 2,500,000 spindles. The good years of the war and the postarmistice boom concealed the fact that these mills were really operating on thin ice. War demand and high prices made the Chinese mill owner forget his former conservatism. He not only ordered large increases in plant, but at the same time he paid his stockholders large dividends. Little thought was given to the question of reserves, depreciation, etc. At the height of the boom some directors were paid back within nine months all the money they had invested in a new mill. Such a taste of prosperity, together with the presence of easy money, encouraged manufacturers to re-invest their dividends in a program of construction which called for a much faster extension of spindleage than could well be digested in such a short period of time.

All was well, however, until the summer of 1920. Then came the big drop in silver. The Shanghai tael, as expressed in gold and sterling, shrunk to half its former value, and almost overnight, with millions owing for foreign-bought equipment, the Chinese owned mills found themselves in 1921 with a slow market, without reserves and with curtailed credit. The foreign owned mills in Shanghai had foreseen the depression and were able to continue dividends and satisfactorily take care of their accounts payable. They have never felt the pinch of hard times to an extent that would materially affect their credit, because a wise policy as to surplus had been followed. Only recently was it necessary for one or two of the British mills in China to ask for more capital and this was easily obtained by means of a treasury stock sale at over 100 per cent premium. The Japanese mills are likewise in good position.

Insufficient and Careless Management.

With the return to normaley and a gradual pulling out of the 1921 economic mire, investors at Shanghai asked themselves why it was that the native owned (75 per cent of the total) spindleage could not compete on equal terms with the foreign owned. It gradually became apparent, however, that laxness in discipline and inexperienced supervision were in the main responsible.

1922 Yarn Prices Stagnant.

This was the situation when 1922 opened. The Chinese mills, by borrowing money from the native banks at high rates were able to "carry on" pending what looked like an early return to profitable yarn prices. This not unwarranted hope, however, was destined not to be fulfilled, for the optimism in China during the first quarter of 1922 was short lived and the guns at Peking in April destroyed whatever basis of credit existed in support of the yarn market. Yarn prices remained low owing to the lack of demand from the interior, which condition in turn resulted from the lack of confidence by merchants in things political. This condition of affairs continued until well into the Autumn of 1922. Occasionally encouraging spurts in yarn buying would be noticeable, but as a mill owner aptly expressed it, these lasted only long enough "to take the curse off the depression." In October and November all the Chinese mills admitted a loss of at least $8.00 gold per bale (420 pounds) on every bale produced.

Rise in Cotton Prices.

It was realized near the close of the year 1922 that Chinese cotton, which had been selling for 16 cents gold per pound, had suddenly become scarce and in sympathy with the world demand was rapidly rising. On February 1, 1923, spot cotton was quoted at 24 cents. This rise of 50 per cent in the price of the domestic staple placed the local mills in an awkward situation. Yarn prices did not rise, nor have they as yet risen, to a point proportionate to the raw cotton increase. 16s yarn in September, 1922, was selling at 125 taels per picul (a tael equals 71 cents U. S., a picul equals 133⅓ pounds) and on March 15, 1923, it had risen only to 155 taels, an increase of only 25 per cent, as against 50 per cent for cotton.

The usual Yangtze River demand for yarn after the Chinese New Year has not developed owing, for the most part, to internecine warfare in the province of Szechuen. Furthermore, no particularly encouraging features are in evidence at this writing, so remedial measures to lessen the strain on the biggest industry in China are being proposed.

Remedial Measures.

Soon after cotton started to jump, several of the large cotton mill owners, who were close to the Chinese government, petitioned for an embargo. They claimed that the rise in cotton was due primarily to Japanese buying for export and they worked up a strong case which led to the passage of a Cabinet resolution calling on the customs to enforce such an embargo forthwith.

The foreign controlled Customs refused to enforce the order, claiming that under treaty China had no right to put such a restraint on trade. It was also suggested that the Chinese farmer who raised the cotton would not favor such a step. At any rate no embargo went into effect, and the original advocates of the measure now see that it was economically unsound, because while it might provide cheaper cotton for the moment, such action would have a disastrous effect on the next year's supply. The Chinese cotton grower would not raise as much cotton, if prices were artificially depressed. The China crop at its best is hardly sufficient to meet the demands made on it now and will certainly have to be carefully fostered and the acreage increased if prices are to remain within reach of profitable operation.

When the cotton mill owners saw that an embargo was out of the question, they turned to more practical and sounder methods to relieve the situation. The leaders decided that a Cotton Mill Loan Association should be form-

ed with a capital of 30,000,000 taels. All Chinese mills are to be required to pay into the Maritime Customs one tael per bale on their output of yarn, and Federal and Provincial likin taxes will be abolished. It is expected that this tax will raise a yearly fund of 2,000,000 taels, which can applied to retire the debentures of the Loan Association. These debentures are expected to be issued at 90, bearing 8 per cent interest. They mature in any case in twenty years but every five years 25 per cent of the debentures will be retired by lot at par. Loans to the mills will entail rigid supervision by competent managers and the physical assets of the mills will serve as security under a very strict trust agreement.

Inasumch as the fund is expected to be administered by the foreign controlled Customs, foreign banks at Shanghai look with favor on the scheme. The largest financial interest in China is reported to have agreed to take 5,000,000 taels of the debentures—the Hongkong & Shanghai Bank.

There is no doubt that the textile industry of China is sound economically. This has been proved by the foreign controlled cotton mills in China. A great deal of experience has been gained in what may be termed China's infant industry and the future looks hopeful in every respect. If wise counsels prevail, little anxiety need be felt, and in due course even the Chinese owned mills will again become stronger financially and more efficient in operation.

Georgia Mill Men Meet at Atlanta

The annual convention of the Cotton Manufacturers' Association of Georgia, held on June 8 at the East Lake Country Club, Atlanta, marked a great forward step in state association history. Plans definitely set in motion on this occasion are of such good omen and practical promise as to make them of widespread interest.

One of the most important phases of expanded activity launched at this meeting developed in the announcement that W. M. McLaurine had been engaged as secretary for the Association, under an arrangement whereby he will devote his entire time to the Association work, and will be the active general executive in all of the activities of the Association except the traffic department.

Plans were also established for strengthening the traffic department, an important division of the Association, so that Traffic Manager Chears and his organization may be in position to render effective service to the members.

A number of important resolutions were adopted at this meeting, and several addresses of splendid quality were delivered. The social side of the affair was not neglected, and the occasion was thoroughly enjoyed by all the delegates attending—and the attendance, too, was noticeably large.

The convention consisted of a morning session and a short business session in the evening.

The Morning Session

was called to order by the president, Lee M. Jordan, and was opened with a prayer by Rev. G. M. Eakes. After a few preliminary remarks, President Jordan appointed the following committees: Nominations, F. B. Gordon, chairman; W. J. Vereen and F. S. Ethridge; Resolutions: S. Y. Austin, chairman; George S. Harris, W. G. Nichols, M. E. Geer, and Cason J. Callaway.

P. E. Glenn, secretary-treasurer of the Association, was called upon for his report, but stated that this would be printed and mailed to each member of the Association.

The next feature was the

Report of the President.

In the beginning, Mr. Jordan stated that his remarks would be more of the nature of a report of what was planned rather than of what had taken place. His report was most interesting and comprehensive, and as a result of unanimous vote on motion of D. A. Jewell at the evening session, a copy of the complete text of this report will be sent to each mill in the state.

In his remarks, Mr. Jordan outlined briefly the history of the Association, and pointed out that endeavors had been made during the past year to make the Association more effective in its activity. A committee consisting of C. H. Williamson, of the Bibb Manufacturing Company; J. D. Massey, of the Eagle & Phoenix Mills; George S. Harris, of the Exposition Cotton Mills; J. T. Carroll, of the Whittier Mills, and J. J. Scott, of the Scottdale Mills, was appointed to develop means for this expansion. The result of the committee's work was reported at a meeting in Atlanta on February 16th, at which over 1,000,000 spindles were represented, and a resolution was unanimously adopted, the substance of which was as follows:

> "We believe that the safety of the vast amount of capital interested in Georgia cotton mills requires a well-organized, active Association and a thoroughly capable executive secretary to devote his whole time to Association work.
>
> "This work can be made very effective in watching any unjust legislation proposed and co-ordinating the individual efforts of all members in opposing it; in answering unfair and untruthful reports in the public press regarding Georgia textile affairs; in publishing facts showing the value of textile mills to the public at large, and in general keeping the public correctly informed as against unjust projudiced and interested attacks."

As a result of this meeting and this resolution, said Mr. Jordan, an organization committee was appointed for carrying the resolution into effect, provided that the response to it was sufficiently encouraging to practically assure the success of the plan. This committee consisted of George S. Harris, chairman; C. H. Williamson, J. D. Massey, W. J. Vereen and Cason J. Callaway.

"Under the direction of this committee," continued Mr. Jordan, "Mr. Glenn, as secretary of the Association, has been exceedingly active in bringing the plans for a more effective working organization to the attention of the cotton mills of Georgia and in eliciting their support of the movement. As a result of Mr. Glenn's splendid work, the committee is able to report to you today that it has already secured the cooperation of 98 mills carrying 2,025,000 spindles. With this support, the committee has gone ahead in perfecting its plan for putting the Association on a real working basis.

"It has rented three adjoining offices in the new Commercial Exchange Building now being erected at the corner of Ivy Street and Exchange Place in the City of Atlanta. One of these offices will be occupied by Mr. Chears as head of the traffic department and his assistants. One of the offices will be occupied by the new secretary who has been engaged by the organization committee. This is W. M.

MacLaurine, who has for some time been employed at the Georgia School of Technology in connection with Vocational Education. Mr. MacLaurine has already been to a number of the different mills in the state, conducting foremanship training classes and all of the mills to which he has been are exceedingly enthusiastic over his work in this connection. Mr. MacLaurine will devote his entire time to the work of the Association in all of its phases except traffic matters.

"It is hoped that every member of the Association will take advantage of the fact that the Association will have permanent headquarters in the Commercial Exchange Building after October 1st, 1923, in which each member should feel as much at home as he is in his own office. These offices will be located in the same building as the Commercial Exchange itself and the members of the Association can there keep in constant touch with market conditions and will also have an office in which they can transact such business as may require attention while they are in Atlanta.

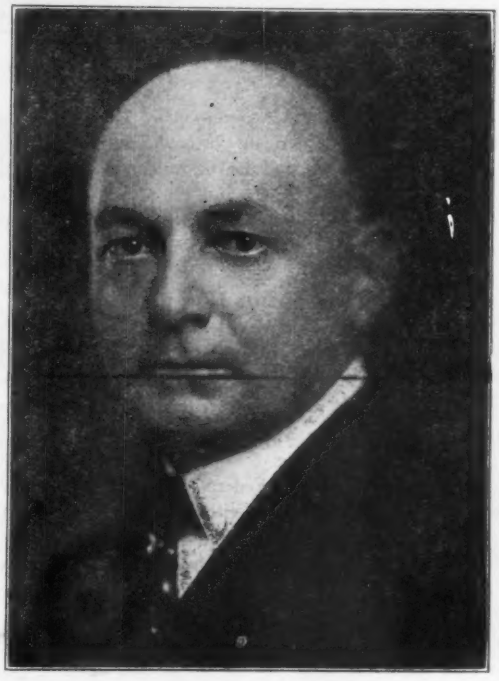
"The secretary will be expected to keep in constant touch with all legislative matters, both national and state, and to keep the members of the Association informed with reference to such matters. He will be expected to inaugurate and carry on necessary educational work among the operatives of the different mills of the state and to visit such of the mills who desire his services in foremanship training without any charge for such service except the payment of his traveling expenses. He will have charge of such matters of publicity as the Association directs. In short, he will be the active general executive under the direction of the officers of the Association in all of the activities of the Association except the traffic department."

"I am exceedingly gratified to be able to turn the Association over to my successor in the belief and certainly with the hope that he will have an Association effectively organized and with income sufficient to make it a really constructive force representing the view of so important an element in the industrial life of Georgia.

"In concluding this report, I think it would be only proper for me to state some of the conclusions which I have reached as president of the Association during the past year. In the first place, the financial situation of Georgia is not satisfactory and sooner or later some method of taxation has got to be devised and adopted to insure to Georgia an income sufficient to maintain itself as a state. So important an element of Georgia's population, as is represented in this Association, should, in my judgment, interest themselves in the question, preferably in concert with other business organizations, and see if they can be of assistance in suggesting and devising a plan of taxation for Georgia which should be satisfactory to the various elements of the citizenry of the state. I think this Association should be active in opposing any amendment to the Constitution of the United States designed to regulate conditions of labor in the several states, particularly the proposed amendment establishing age limits. Our whole theory of government is that such matters should be left to each state for its own determination.

"So far as I am personally concerned, and I believe so far as a very great majority of the mill men of Georgia are concerned, I think it would be advisable for Georgia to have on its statute books a provision that children under the age of 14 years should not be allowed to work in manufacturing establishments under any circumstances whatsoever. If we had such a provision, we would be in line, as I am informed with all the states of the United States, except Maine, Ohio, Michigan, South Dakota, Texas, Montana and California. I feel that I am expressing the views of at least a very considerable number of the members of this Association, that it would be well to establish the fact that no single shift of operatives should be allowed to work more than 55 hours per week and that no child under the age of 16 years should be allowed to work on night shift.

"I do want to suggest a slightly different plan of management of the affairs of the Association. I think we should have a president with pretty broad general authority and only one vice-president. I think the office of secretary and treasurer should be divided and the treasurer's office made responsible for the collection of all dues and



PRESIDENT LEE M. JORDAN.

the disbursement of all funds. Under the new plan of organization, the treasurer should collect not only the general dues of the Association, but also the dues paid by those members toward the maintenance of the traffic department. I think the general conduct of the affairs of the Association should be lodged in a Board of Directors, consisting of about seven members elected by the membership of the Association at its annual meeting, and it is my judgment that if such a Board consists of seven members, four of such members should be representatives of the larger mills of the state and three representatives of the smaller mills. If such board is elected by the membership I believe it would result in more interest and activity on the part of the members of the Board."

Following the presentation of his own report, and in keeping with the purposes of the Association for a more highly developed activity, President Jordan announced that the next speaker, who was James D. Hammett, president of

A GROUP OF THE MEMBERS AT THE ATLANTA ATHLETIC CLUB.

the Cotton Manufacturers' Association of South Carolina, past-president of the American Cotton Manufacturers' Association, and president of the Chiquola Manufacturing Company, Honea Path, S. C., and the Orr Cotton Mills, Anderson, S. C., would discuss the subject of "Cooperation Between State Associations." The chairman then presented Mr. Hammett.

Address of Mr. Hammett.

Mr. Hammett began his remarks with an appeal for the observance of the sovereignty of the individual states. He said that the Constitution of the United States, conceived by wise men inspired with the high purpose of their duty, was never intended to put the sovereignty of the states in the background and bring the entire ruling of all the states directly under the Federal Government. Every amendment to the Constitution within the last fifty or sixty years, he said, has failed to benefit the people of the United States as a whole, and has largely been fathered by someone desiring to serve the selfish interests of some individual or society. The people of the State of Georgia, Mr. Hammett pointed out, being familiar with local conditions in their own state, and knowing the sentiments of their people, are in better position, and have the right to govern their own state; the people of the State of Maine or the State of Washington do not know what is in the best interests of the people of Georgia and therefore cannot determine what will serve them best.

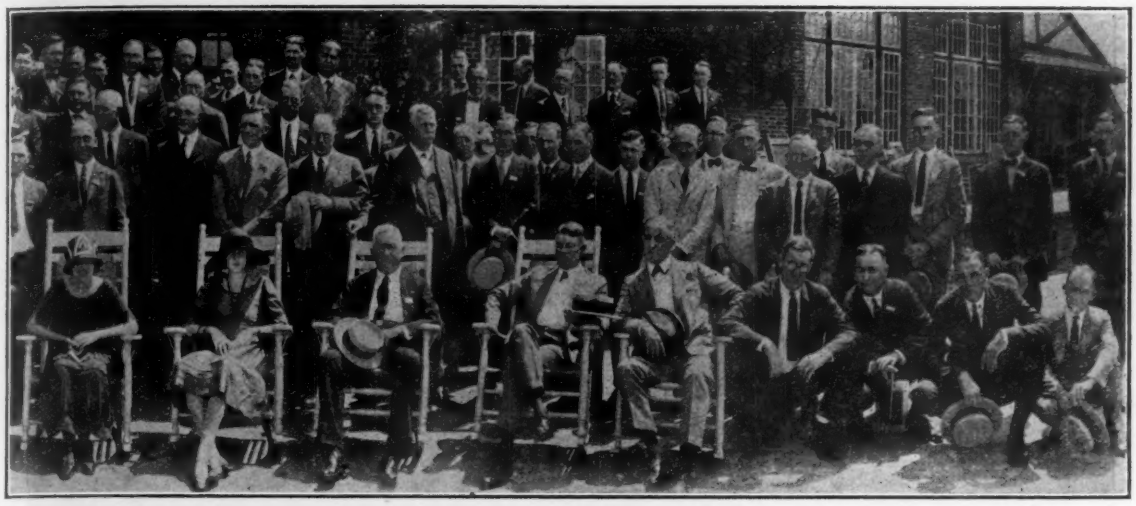
Recalling that during the slave-holding period prior to the Civil War, members of the press and public speakers endeavored to create in the minds of the world the impression that the South was a section of brutal slave-drivers, Mr. Hammett said that today there are "this same type of men and women, who are paid by the space they write, who are misrepresenting the cotton manufacturers of the South in a similar manner. But if the truth is known, it will be found that they are in error. Our friend this morning in his prayer said that you are here primarily to make money for your stockholders. Conceding that statement, I say that incidentally—and the incidental is almost if not as important as the primary—you are here following an industry that employs thousands of men and women, and it is down in your hearts to deal fairly with these people and uplift them and make them a people that it is a joy to work with."

At this point the speaker outlined the development of the textile industry in the South. He drew a picture of the terrible conditions existing in the southern states following the Civil War, with the lands devastated, widows and orphans destitute, and with the political power and control in some states in the hands of those who had formerly been the white man's bondsmen, and declared that the honorable white men of the South, in an endeavor to find a way out of this chaos, "decided that perhaps the best thing, the thing that would perhaps give honorable and lucrative employment to these men and women would be cotton manufacturing, and they organized the first cotton mills, not of large proportions, not with a view to making money, primarily, but more with a view to establishing an industry that would give employment to the men and the widows and orphans of those lost on the battlefields of Virginia, never to return home again."

Tracing the marvelous growth of the industry from this beginning, Mr. Hammett pointed out that today the South is producing all the various types and constructions of yarns and goods, and is in position to further develop into more widely varied production of all the grades manufactured in the world.

Mr. Hammett then outlined in detail the organization of the Cotton Manufacturers' Association of South Carolina, of which he is the president, explaining the various committees and their functions. His description of the workings of his Association showed an organization well-rounded for a wholesome activity, and his suggestions were of particular interest to the Georgia Association in view of their plans for the future.

The speaker expressed his views with reference to the entrance into the southern field of textile manufacturing interests of other sections. "While there has been a good deal said about the northern mills moving South, the biggest part of it is rot," Mr. Hammett said, "but I want to tell you gentlemen that while I want to see the South progress so that she will be at the top commercially as well as agriculturally, I do not want to see it progress more rapidly



than our southern labor can take care of it. I do not want to appear as lacking in courtesy to our friends of the North, I do not want them to feel that we are not a hospitable people—we are anxious for them to come and be with us, if they are going to be one of us; but do not come too fast. We want them to come provided they can come and leave behind that foreign element of labor."

In conclusion Mr. Hammett urged cooperation of the individual mill men in the work of the Association, and stressed the importance of cooperation of the state associations between themselves and particularly with the American Cotton Manufacturers' Association, the parent organization.

The concluding speaker on the morning program was Hon. Henry J. Fullbright, state tax commissioner of Georgia, who outlined to the manufacturers the financial condition of the state, with its numerous demands for funds from the various institutions. Commissioner Fullbright declared that the present system of taxation in the state is antiquated, unjust, unfair and inequitable. He explained some of the proposed suggestions that have been made as a remedy and pointed out the impracticability of a number of them. He called upon the manufacturers for their earnest consideration of the affairs of the state, and requested their assistance in an endeavor to arrive at some fair and just system of securing revenue for the state's demands.

Following the morning session, the delegates were served luncheon on the veranda overlooking a beautiful portion of the club's grounds and golf course.

The afternoon was devoted to various diversions. An inter-city golf tournament was enjoyed by a large number of the members, the team trophy going to the representatives from Rome, with Colonel W. H. Dismuke, of Columbus, winning the individual trophy.

The Evening Session.

A delightful dinner was served on the terrace of the club house which was interspersed by dancing by those inclined to trip the more or less light fantastic. The excellent mill band of the Exposition Cotton Mills furnished the music for the occasion alternating with a four-piece orchestra.

At the conclusion of the dinner, President Jordan called the members of the Association into a brief business session. Hon. Hoke Smith, former cabinet officer, former U. S. Senator from Georgia, and former Governor of Georgia, was an honor guest at the dinner, and was called upon by President Jordan for a few words at the beginning of the evening session.

"What I would like to say about the cotton manufacturing industry is something that needs to be said, not to you men, but to the people of the whole state," declared Senator Smith. "What I mean is that while I have been away from Georgia especially during the past two years I have been studying conditions in Georgia, desiring, in spite of my absence, to contribute something to the welfare and prosperity of the people who had honored me so greatly, and to my attention has been brought what is being done for Georgia by the manufacturers of cotton. I want to tell the farmers of Georgia that there is no line of industry in Georgia which serves them as the cotton manufacturers. In the first place, you furnish a market for their raw materials right here at home. In the next place you will furnish them, more and more as the number of the factories increase, markets for their surplus foodstuffs, which they claim they produce but cannot market. You are worth more, the growth of the cotton manufacturing industry is worth more, to Georgia and to the farmers of Georgia than any other industry." Senator Smith concluded his remarks by declaring that he wanted to see the industry in the state develop more and more, and he pointed out some of the advantages offered by the section to new establishments.

Following the remarks of Senator Smith, President Jordan introduced to the members the new secretary of the Association, W. M. MacLaurine, who spoke briefly, asking for the whole-hearted cooperation of the members in the carrying out of the new plans.

Resolutions Adopted.

The next order of business was the report of the resolutions committee, made by S. Y. Austin, chairman. Among the resolutions adopted were the following:

We, the Resolution Committee of the Cotton Manufacturers' Association of Georgia, desire to call to the attention of the Legislative Committee of this Association that the present state laws now prevents under certain conditions the employment of children between the ages of twelve and fourteen, and we wish this Committee to consider the advisability of requesting the next Legislature to amend the present law so as to prevent the employment of any child under 14 years of age in cotton mills.

BE IT RESOLVED that this Association in convention assembled commend the Atlanta Commercial Exchange for its increased usefulness to dealers in cotton and endorse its efforts to make Atlanta a

A GROUP OF THE NOTABLES.

Front Row, Left to Right: J. D. Hammett, President, South Carolina Cotton Manufacturers' Association; P. E. Glenn, the New President of the Cotton Manufacturers' Association of Georgia; Past President D. A. Jewell; Past President W. J. Vereen. Back Row: Past President Cason J. Callaway; Harry L. Williams, the New Vice President; and Lee M. Jordan, the Retiring President.

point of arbitration and delivery of cotton contracts and tender our cooperation to them in the accomplishment of this movement.

A resolution was passed inviting the knitting mills of Georgia to become members of the Association and cooperate in its aims and purposes; the financial basis of their membership to be decided by the President and Board of Directors of the Association.

Because the great scarcity of common labor in other sections of the country had induced much activity among labor agents tending to entice farm workers away from the South, adding to the difficulty of farming and increasing the cost of farm products, a resolution was passed urging revision of the immigration laws which would allow an increased number of desirable immigrants to enter the country. This resolution also urged a careful examination of immigrants in the country of original departure and pointed out that the prime qualities of good character, good health, a capacity for loyalty to our country and its established government, and an ambition to rise upon the merit of honest work should be considered ahead of and not subordinated to the time honored literacy test.

Another resolution thanked State Tax Commissioner Henry J. Fulbright for his interesting address on tax matters and authorized the president of the association to appoint a committee of three to confer with a similar committee from the Georgia Bankers' Association, and the committees of other associations and tender assistance to the proper officials in formulating and drafting suitable tax legislation.

A resolution of appreciation was given to the State Board for Vocational Education for their work among the mill communities which concluded as follows:

We believe the work in evening classes and part time work is effectively reaching a group of our employees that can be reached in no other way. For this reason we wish, not only to express our appreciation, but we wish to endorse its work and pledge our support.

Among the other resolutions passed were several expressing thanks to the various speakers, the golf committee, the Atlanta Athletic Club, the press, etc. One of these was so particularly appropriate that it is reproduced herewith. It read as follows:

We, The Cotton Manufacturers' Association of Georgia, would be ungrateful if we failed to express to our retiring officers our appreciation and satisfaction for the splendid way in which they have handled the Association's business this year. We desire particularly to thank our retiring president, Hon. Lee Jordon for the business-like manner, promptness and untiring effort he has put forth in making this a splendid year. There is one other man whose name we must call and when it is called, the heart and soul of the Association responds, Mr. P. E. Glenn, has probably done more for the Cotton Manufacturers' Association of Georgia than any other one man. We desire to thank him for his years of service and pledge him our support and co-operation in what ever he does.

Next on the program was the report of the Cotton Committee of which R. C. Freeman was chairman, but in whose absence it was read by William G. Nichols, of Griffin, a member of the committee.

Report of Cotton Committee.

The purpose of the Cotton Committee arranged for at the annual meeting of the Association in 1922 was to act with the officials of the State College of Agriculture in Athens and the Government Experiment Station in Griffin, in arousing planters to the need of raising cotton of better staple and devise methods or plans for bringing about the general cultivation of cotton producing a better staple than has been raised in the last few years.

We cannot report that we have effected any wide-spread movement in this direction. We can only outline some trial efforts which have met with some success or that hold out some promise of success in this direction.

It appears that owing in part to the desire to get an early and quickly maturing crop which would anticipate the period of activity of the boll weevil, there has been an increase in the use of short staple strains such as King, Rucker, Half and Half, etc.

Doubtless the lack of assurance among planters that the cotton crop would be a success under boll weevil conditions and the use of less fertilizer has contributed to the raising of short staple.

It may be interesting to describe some effort which has been made in Griffin and Spalding Counties to bring about the planting of cotton of better staple, and to discover the best methods of cultivation under boll weevil conditions.

J. P. Nichols is President of the Griffin Manufacturing Company and also of the Griffin Banking Company, and is thus familiar with the farming community. This season the bank has employed an agricultural agent to devise and work with the farming community. The bank has purchased about 500 bushels of improved seed which was sold at cost or given without charge to cotton planters. Under an independent committee of farmers and merchants, rules were

PRESIDENT-ELECT P. E. GLENN.

drafted for a cotton contest to be supervised by this committee independently of the bank, which only provided the prizes and the registration of the contestants. The contestants were divided in three classes, those planting plots of 10 acres, 5 acres, and 3 acres, respectively, and a first, second, and third prize was promised in each class, running from $150.00, first prize in the 10 acre plot, to $15.00 as a third prize in the 3-acre plot; the prizes aggregating $540.00. About 60 contestants have been registered who have entered cultivation in the aggregate of about 500 acres. Under the rules of the independent committee the contestants make report of the kind and amount of fertilizer used, the amount and use of boll weevil poison; and the contestants also promised to keep the seed cotton from this acreage separate so that it may be used in future cultivation.

In order to forward the contest and in general to help the cotton situation, the Griffin Banking Company purchased six carloads of Government fertilizer at a cost of $52.85 per ton, delivered. This was distributed at cost.

In this connection, the bank and one of the local cotton mills have also guaranteed payment against six carloads of poison for the use of the contestants and other planters of the county.

The contestants were entertained by the Banking Company recently at a barbecue at Experiment Station and the rules of the contest were once more gone over and made clear, and at which time a goodly amount of enthusiasm was manifested on the part of the farming community, and some new contestants joined in the movement.

The first questionnaires or reports are just being turned in and it is, of course, too early at this time to make definite reports as to what the result of this community effort will be.

We desire to report that the Callaway group of mills, represented on this Cotton Committee by C. V. Truitt in 1922, sent an expert into western cotton fields to investigate and report upon a proper strain of longer staple cotton to be introduced into Troup County. They then purchased 200 bushels of seed of the variety adopted as a result of the investigation and gave this seed to farmers with the stipulation that it be grown, gathered and ginned by itself. This seed afforded a staple of about 1 1/16 inch which commanded a premium of three-fourths to one cent per pound in the local market and as a result about 3,000 bushels of this seed have been planted this season. As a result of this movement Troup County, as a community, is now practically on a 1 1/16-inch staple basis.

This year the banks of LaGrange have combined to guarantee purchase of a large quantity of poison which was sold at cost.

Your Committee also desires to embody in their report the following statement from Doctor Fain of the State College of Agriculture, who sent out a questionnaire on the cotton situation with inquiries concerning staple and to call especial attention to the latter part of this statement concerning the results in the Winterville community.

"The questionnaire on the general cotton situation, with questions included concerning staple, sent to the cotton mills, brought responses from 76 mills. The information thus obtained has been summarized by the Division of Agronomy of the Georgia State College of Agriculture as follows:

"To the question as to whether the staple of cotton has deteriorated in this state, 72 mills replied. Of this number, 4 mills replied that the staple has not deteriorated; the other 68, that it has, some of them emphatically.

"The replies as to the time when this deterioration began vary from 1910 to 1920. This variation is probably due to the location of the mill with reference to the boll weevil invasion and the changes attending it.

"The principal reasons given for the deterioration are the use of poor seed, inferior varieties, and the damage done by the boll weevil. As staple is a varietal characteristic, influenced to some extent by seasonal conditions, the answers are unquestionably striking very close to the trouble.

"In spite of this deterioration, however, the questionnaire shows that out of a total of 553,298 bales used by the mills answering, 416,523 bales were grown in Georgia, and 136,775 bales were purchased outside. The trend of a number of answers seems to indicate that the number of bales purchased outside of the state will increase unless better staple is assured.

"In answer to the question as to the staple used during

the past year, the following distribution was shown:

Less than 7/8"	6,500 bales
7/8"	108,000 "
7/8" to 1"	282,770 "
1"	104,433 "
1" to 1 1/32"	51,575 "

"This shows that over a half million bales are used from the three groups, 7/8", 7/8" to 1", and 1". It is well to keep this figure in mind when production is considered.

"Another question, in this connection, was the staple preferred. The distribution in answer to this question is:

7/8"	39,100 bales
7/8" to 1"	66,400 "
1"	290,723 "
1" to 1 1/32"	119,075 "
1 1/32"	32,200 "
1 1/8"	4,800 "

This is little less than one-half million bales in the three groups, 7/8" to 1", 1", and 1" to 1 1/32", or it might be said that the mills desire cotton staple approximately 1/32" longer than they are apparently able to secure, or that 81 per cent should be 1" or longer, and that it would be a desirable thing to eliminate all cotton less than 7/8" in length.

"In addition to this improvement in staple, a rather large number of mills seem to desire a more *uniform* staple. Short staple and unevenness of staple are given by approximately 80 per cent of mills answering the questionnaire as the most serious defects in the Georgia staple.

"To the question as to the value of the different length staples to the mills, approximately one-third failed to answer. Approximately another third, giving 7/8" as the basis, indicate that they could pay from 1/4 to 1 cent premium for 1" cotton. The majority of those answering indicate 1/2 cent on as the amount they could pay. Quite a number, which would pay a premium for 1", would not pay a premium for 1 1/32", while one mill indicates that it would pay as much as 5 cents on for 1 1/32" cotton over 7/8". These mills indicate also that they will have to discount less than 7/8" cotton from 1/4 to 2 cents per pound, the majority indicating 1/2 cent per pound as the amount of this cotton should be discounted.

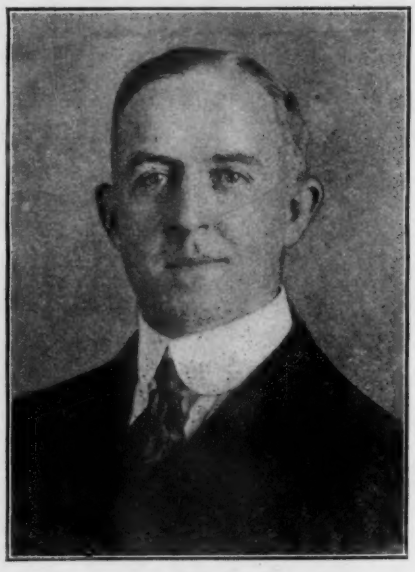
"Five mills indicate that 1" should be the basis and that they would be able to pay from 1/2 to 1 cent per pound premium for 1 1/32" cotton. They indicate also that they would discount 7/8" cotton from 1/4 to 2 cents and less than 7/8" from 3/4 to 5 cents per pound.

"This matter of value is the crux of the situation. As long as the farmers believe that there is no diference in the value of cotton less than 7/8" and that of from 1 1/32", they will continue to grow the shorter cotton for two reasons: First, because it gives a larger per cent of lint; secondly, because there is little or no deterioration in this type of cotton. It is about as short as it will become under Georgia conditions.

"At a meeting at the Reed Creek Consolidated School, in Hart County, last December, when the matter of uniform production of cotton was under consideration, and also the matter of selecting a variety with better staple, one of the farmers voiced this opinion, when he said that he doubted whether the farmers could grow a uniform type of better staple as long as they received no difference in price for the better staple.

"The work that has been done in this state, as well as in North Carolina and South Carolina, indicates that the big boll type of cotton, with staple ranging from 1 1/32" to 1 1/32" in length, comes nearer meeting the requirements of the farmer than any other type, provided the variety has back of it a sufficient amount of the right kind of selection. From the questionnaire, this type would seem to meet the requirements of the mills. This type of cotton is available; to get it grown is the big question. The most successful method yet devised is community production, with a center available where seed, which are being maintained and improved, can be secured.

The Winterville community is an example of what can be done in community production of cotton. In 1920, a class of ten boys in the vocational school planted 10 acres of improved cotton of the big boll type. In 1921, others



W. M. McLAURINE, THE NEW SECRETARY.

in the community became interested, and 750 acres were planted, and a Pure Seed Association was formed. In 1923, upwards of 1,500 acres of this variety of cotton have been planted.

"When this work was begun in 1920, the community was growing 3,700 acres of cotton and using something over 20 varieties; in 1923, 3,000 acres are being grown, with about 2,700 acres planted in 2 varieties, both of the same general type, the other few hundred acres are distributed among 6 varieties. This is certainly a move in the right direction.

"Is it not possible for a number of mills, or a number of groups of mills, to become the motivating force in community production, with a center established for the improvement and maintenance of the variety used?"

Perhaps Doctor Fain's communication has not emphasized clearly what is implied by the community production of cotton. In the community production of cotton there is concerted effort to raise perhaps only one or two strains of cotton, which are similar in their characteristics. Unless the whole of the community can act together in raising cotton of good staple, say, 1 1/32" to 1 1/32", the fields of their neighbors, who may be raising short staple cotton, will be cross fertilized by insects with the better quality staple,

and the seed will become mixed with the superior staple at the ginneries, and the result will be a degeneracy in the seed for planting in following years. It is for this reason that in our effort to bring about raising of better staple, great emphasis should be placed upon the community farming. Furthermore, the community should act in concert to maintain the quality of the seed selected even from their own district.

We shall watch with interest the result of the efforts for improvement in cotton in Griffin and LaGrange and we believe the report of Doctor Fain will be of interest and hope it will stimulate some of our members to effort in bringing about similar results in their vicinity, and if every mill representative in the Association would influence his own neighborhood the movement for better staple cotton would be widespread throughout the state.

As stated by Doctor Fain, the improvement spread in Winterville, and it has been observed in Griffin that the movement started by the bringing about the planting of cotton of better staple, has not alone taken root by the contestants, but has already spread to other practical farmers who have on their own initiative taken steps towards obtaining better seed.

The final feature of the convention was the election of officers for the new year. P. E. Glenn, who has efficiently served the Association for several years as secretary-treasurer, was unanimously elected president; Harry L. Williams, vice-president; Thomas J. Callaway, vice-president and manager, Milstead Manufacturing Company, Milstead, was elected treasurer, and W. M. MacLaurine secretary. A board of directors, consisting of the following seven men, was elected: F. S. Ethridge, Atlanta, secretary, Pepperton Cotton Mills, Jackson, and Social Circle Cotton Mills; Harry P. Meikleham, agent, Massachusetts Mills, Lindale; R. T. Jones, president, Canton Cotton Mills; W. H. Hightower, president, Thomaston Cotton Mills; J. H. Mayes, general manager, Fitzgerald Cotton Mills and Cochran Cotton Mills; C. H. Williamson, secretary, Bibb Manufacturing Co., Macon, and Clifford J. Swift, general manager, Swift Spinning Mills, Columbus.

Nikko and the Jackass

A Second Modern Fable

NOT BY AESOP.

Some time ago before cotton mills got to be quite as thick around this neck of the woods as they are now; in fact a few years before the late Mr. Tutankhamen got over his last tank, said his last amen or got himself walled up in his junk shop for the edification of future ages; to be real explicit, some considerable eon prior to the night of the big wind in Ireland or the time when Hector could have safely been referred to as nothing but a small bull pup, there lived somewhere within the present confines of what is now the great State of Alabama, a rather unpleasant young gentleman by the name of Nikko.

I am not quite sure that his name was Nikko. History is not very clear on this point, but what is a name or two between friends? Suffice it to say that he was his father's pride and the joy of his mother's declining years. I doubt very much if you or I would think quite that well of him. His tail was just as long, his ears as flat and his nose as absent as current pulchritude demanded and in fact he differed no whit from the other neighborhood monkeys, save for one thing—he could laugh. Now scientists tell us that the only mental difference between man and any lower animal consists chiefly in his ability to do two things—to reason and to laugh. I would not go so far as to say that Nikko could reason, or in fact that there was any reason for Nikko, but inasmuch as he could laugh, to a certain extent we are to believe that his advent marked a long step forward toward the development of scientific management of cotton mills.

Not that Nikko knew anything about that, or would have cared. He was busily engaged developing his sense of humor. When anything really funny would happen, like for instance when one of his neighbors would receive such a pressing invitation to dinner from a visiting tiger that he would maybe lose half his tail before he could get far enough up a tree to decline that honor, or when a big elephant came along and accidentally stepped on one of his playmates and shoved him so far down in the mud that he never would be able to get out again, Nikko would see his opportunity. He would grab his stomach with both hands and throwing back his head would howl until the squirrels fell out of the trees and all the lions within hearing would beat it to the tall grass in alarm. Of course he attracted some attention. In his early youth he was regarded as a freak and avoided by all who had a reputation to sustain. As he grew older, they got used to him and toward his old age a venturesome spirit or two decided that maybe they would like to try it. So they all went together in search of Nikko and found him sitting in the sun playing hide and seek with his fleas. You must understand that they were all young and didn't know any better, but they formed a circle around him and chorused "Mr. Nikko, we want that you should learn us how to do your trick so we can be funny too, sometime."

It didn't quite get to Nikko at first, but after they had repeated it a few times and he had time to think it over, it finally soaked in. When it did, you could have heard him two miles. "What?" he bawled, "Me? You want me to learn you? You young squirts think that I am going to give you the benefit of my lifetime of study and experience and tell you, just like that, all I know? Sure is accommodating of you, for a fact." And he threw his head back and whooped until his fleas all jumped off him on to the other monkeys with the idea that Nikko was sick and probably not a good source of provender any longer.

After that he got to be sort of famous. Visiting monkeys would climb adjacent trees to gaze respectfully upon him. He joined all the local lodges by request, was elected president of the rotary club, and would, in time, have been appointed to something prominent like coroner if an old jackass hadn't happened by one day and not only outlaughed Nikko forty ways, but also waggled his ears fore and aft in the most unconcerned manner possible while he

was at it, which was something Nikko couldn't do.

That sort of finished the poor old boy up. Nothing seemed to agree with him from then on, and he finally disappeared. Some folks say that he jumped in the river and drowned himself, but I know better. I don't know where he went, but I do know that he lived to raise a numerous progeny and some of them afterward got into the cotton mill business. I met one of them not so very long ago.

I happened to mention that our mill had decided to do some indigo dyeing and that as none of us had ever had any experience along that line we were all trying to learn what we could before the work started.

"Say" he said. "I know the very thing you fellers need. I have the best size formula for indigo work you ever see."

"All right" I replied, "I'm waiting."

"For what?" says he.

"For you to tell me how to make that size, of course," I responded. "Didn't you say you were going to give it to me?"

The old man scratched his chin. "Naw," he whispered. "Naw, I didn't say that, but I'll tell you some time."

"No time like now." I says. "Tell me now."

Then he owned up. His size was a secret. I suggested that if it was as secret as all that, very probably it wasn't very much good, but he didn't seem to like that, so I departed, and on the way couldn't help reflecting that although I was a comparatively young man and not possessed of a very good job, I still had a better one than he, and wondered whether that had anything to do with it. I finally decided that it had. He was a man who had a life time of experience which he did not want to give away, but as he had evidently not profited by any other man's experience and as it takes one man by himself about three thousand years to learn all this business if he doesn't forget anything in the meantime, the old man was still just a beginner.

I think there used to be more Nikkos in the dyehouse end of it than anywhere else in the world. It was a natural development. In the days when dyes were nothing more or less than various stews of animal, vegetable or mineral substances, the composition of which was but little known and the chemical reactions not even imagined as yet, it was perfectly natural that the industry should develop into secret processes. If one man discovered an improvement it was but natural that he kept it to himself and in due course handed it over to the son who succeeded him in the business. Great family fortunes were built up in this way and then lost when somebody else got ahead. But in recent years, since dyeing has been reduced largely to a dry looking set of chemical formulae and scientificially constructed synthetic dyestuffs, there remains of these old secret process boys, naught save a passing whiff of some of their more unsavory compounds and an occasional far faint wail from some old fossil who is too boneheaded to realize that he is out of date and too stubborn to die off and make way for a better man.

In other words, there are no more secret processes in the ordinary run of cotton mill work. Any dye company will send a competent man to your assistance if you have trouble in the dye house and will place at your disposal all the practical and scientific knowledge they possess. Any machine works will come to your help in the same way with speeds and settings proven by long experiment. Furthermore, nine hundred and ninety-nine practical men out of a thousand will tell you anything that they know if you ask them right. The other one man is the sometimes ludicrous and often pathetic exception whose ability to absorb new ideas is infallibly commensurate with his unwillingness to impart them.

I think the greatest thing that has happened to us in recent years is the inauguration of sectional meetings where men can meet and talk over the problems of the different departments, and the establishment in such technical magazines as COTTON of open discussion departments for the benefit of those who have something to say or something to ask. But these would have fallen far short of their intended sphere of usefulness if the men themselves had not been willing to talk, and I think that this new birth of frank and open confession of difficulties, and equally frank and willing help furnished by those who know, marks a forward step in our business as important as Nikko was in the development of the human race.

Formerly, all that textile magazines could get were stuffy articles on "How To Make Even Yarn" from a superintended whose mill made yarn that made link sausage appear, in comparison, as smooth as a lease rod. At the next convention, very likely he would get up and read it while the rest of the folks yawned and wondered when they would get to the eats. Now he doesn't do that. He gets up and hollers "My yarn looks worse than the devil" and everybody comes to his help. I think a monument should be raised to the man who said at one of the recent sectional meetings that his yarn had as much variation as anybody's. At the same time, I have often wondered whether his employers ever fired him for making such a radical statement. (Editor's note. They haven't.)

"But," I hear you say, "Do you mean that I should run around telling everything I have been able to learn in a lifetime of hard work to every young squirt who may live to grow up to get my job."

Certainly not, Nik. If you do you will certainly do a lot of damage. In the first place you will undoubtedly give a wrong start to some promising young beginners, and in the second place you are liable to display the full extent of your ignorance. But if anyone does come with the proper spirit of inquiry and there happens to be something that you do know that will help him out, spill it. Don't forget that somebody helped you, not once, but a lot of times. Then be sure and find out if he knows something you don't. More than likely he does, however green he looks. Furthermore you need not worry much about his getting your job as long as you bear in mind that all you have been able to learn is not such a helluvalot after all.

But if you keep yourself shut up in a shell like a clam, and keep the shell shut hard and fast against the rest of the world, don't say I didn't warn you if, about the time you get to the place where you think you are the original high, wide and handsome guy of the textile industry, some young feller comes along that you don't think any more of than any other ordinary jackass and not only pulls off your own special stunt better than you ever did but adds on a few more for good measure that you have never even thought of.

Don't say I didn't tell you!

In the mean time, if anybody who wants to know anything, just anything at all, will just send me an addressed post card, I will guarantee to write on the back of it everything I know and fill up the extra space with my picture.

Casting around for a fitting "lead" for this, the report of the Southern Textile Association's convention at the Kenilworth Inn, Asheville, N. C., we can find no more appropriate expression than "it was the best yet." Because it was. There is no doubt in the world about that.

The dates of the meeting were June 22 and 23. The convention headquarters were at the Kenilworth Inn, and it would indeed have been difficult to select a more charming location for a meeting of any kind. The photograph at the heading of this report conveys only a small idea of the charm and beauty of the hostelry and its surroundings, and considering alone the comfort, convenience and hospitality of the meeting place, those who weren't there—and it seemed they were in the minority—surely missed a treat.

But that's not all. The meetings were up to the usual standard of the Association's gatherings within recent years. The whole occasion bore out in the utmost every expectation that had been predicted for it by those intimately associated with the preparation plans.

Space—or rather the lack of it—precludes the expression of a desire to talk about the exceptionally gorgeous time everybody had. We must get into the program and leave the reader who wasn't there to live in expectant anticipation of the next gathering, and those who were there in pleasant reminiscence.

The First Session

was called to order on Friday morning, the 22nd, by John W. Clark, president of the Association, who called upon W. B. Williams, of the American Spinning Company, Greenville, S. C., for the invocation. John H. Cathey, newly elected mayor of Asheville, next welcomed the delegates in a happy vein, and George W. Murphy, superintendent of the Dixie Cotton Mills, LaGrange, Ga., responded to the remarks of welcome as follows:

"The southern textile industry is a youth in years, a sage in knowledge, and a wizard in accomplishment. There are, perhaps, many who do not recognize the truth of this statement because they do not realize the remarkable development and are not conscious of the factors which have contributed to the present condition and which will advance the future growth; yet there are some who do so realize as may be seen from the following quotation of Edwin Farnham Greene, president of Lockwood, Greene & Company:

" 'Success in the southern mills has been due not to long hours of work and low pay, or to the employment of unintelligent workers, as the labor unions would have the country believe, but to efficient management. By efficient management I mean 100 per cent efficiency.

" 'If your mills in New England are managed as they are in the South, we are bound to have a bright future.

" 'I do not wish to cast any reflection upon our New England managements, but so much has been said and written concerning southern competition with its long hours and low wages that it is about time to place the cerdit for southern success where it belongs.'

"The Southern Textile Association is the offspring of this remarkable southern industry and is composed of those whose efforts are devoted to its advancement, of those whose every word and thought has pointed toward its improvement, of those who gaze with conscious pride on the beautiful homes of employees with their attendant gardens and domestic animals, of those who can foresee the coming day when a textile plant will be as essential to every town as a bank or a mayor and council, of those who are anticipating the future need and are scanning the high school and college rosters in the effort to find the future needed executives. We, unshorn Samsons of the manufacturing world, are rapidly becoming conscious of our increasing powers, and we can only trust that these giants will not make the mistake of using the wrong jawbones too vigorously.

"We, the associates here gathered together, are the representatives of the thousands of operatives all of whom are native-born Americans with American ideals, who live, think, speak and act as we do, and our earnest hope and prayer is that we shall always be the representatives of this class of citizens and that we shall never forget their interests while planning our own. Our hearts swell with pride when we remember the part this association has played in advertising the advantages of this section of our country which we love so well, and when we see what an excellent quality of product we can manufacture, both of which are directly due to the interchange of ideas made possible by this association.

"We have one and all looked forward to our gathering in Asheville, to the pleasures of the "City of Hospitality," which is the "Mecca" for those who would lay down their burdens, brush aside their cares and forget their worries; to those who would lend every faculty of mind and body and soul to the keen enjoyment of the cordial hospitality, the wonderful health-giving climate and matchless facilities of entertainment.

"In behalf of this association I wish to express our appreciation of the hearty welcome offered to us and to tender our thanks for the courtesies shown and the privileges extended. In the cordiality and sincerity of your welcome, as shown by your provisions for our comfort and pleasure, you

have challenged our best efforts to press forward towards still greater deeds of industrial valor, and you have inspired us to advance still further into that mysterious unexplored realm of experiment and invention. Incidentally, we must remind the members of the mistake of the lady who calmly walked into the bank and informed the cashier that she had decided that for the future she would transact her business with that institution, whereupon the cashier assured her of the pleasure of the bank in having her for a customer. She immediately drew a check on the bank for $25.00, which was turned down with the comment that a deposit was necessary before a withdrawal could be made. Our association is very much like the bank, and our members must remember that they cannot realize any benefit unless they first make a deposit of their ideas and suggestions."

GEORGE W. MURPHY, WHO RESPONDED TO ADDRESS OF WELCOME.

President's Address.

The next feature of the program was the annual report of the President, made by Mr. Clark, who said in part:

"We come this week to the close of another association year. During the year we have held our usual semi-annual meetings and also three sectional meetings. Each of these meetings has been of very material value to the southern textile industry. The Weaving Division, of which W. H. Gibson, Jr., is chairman, met at Anderson, S. C., in July, 1922, the Carding Division, B. R. Burnham, chairman, met at Anniston, Ala., in December, 1922, and the Spinning Division, C. R. Harris chairman, met in Spartanburg, S. C., in April, 1923. In each of these meetings we had for one day an intensive study of one department by men familiar with that department and its problems. In each of these meetings many points of interest were brought out.

"The slogan of the Southern Textile Association is progress. It is ever striving to make some improvement in its work today over what it was yesterday. In this connection at this time it is probably fitting to review briefly a few facts relating to the history and progress of the industry in the past.

"At the beginning of recorded history we find the greater part of the human race wearing some kind of covering for the body. The kind of wearing apparel possessed by a race or people often indicating in a measure the degree of civilization attained. It is thought that men at first wore the skins and furs of animals which they slew. Later they learned to make fabrics from the bark of trees, grass, leaves and other such material as they found at hand. Coming down the ages as civilization advanced they learned to spin and weave the linen fiber as obtained from the cocoon of the silk worm and the wool fiber as clipped from the backs of sheep.

"The first record we have of cotton being used as textile fiber dates back about 800 years before the birth of Christ. At that early time cotton fabrics of the finest texture were being made in India and distributed in a greater or less degree throughout the known world. In 1492, more than 2,000 years after this record of the first use of cotton, Columbus, while endeavoring to find a new trade route to India, landed in the West Indies. At that time the cotton plant was growing on this continent and some of the adjacent islands and many of the natives were already skilled in spinning and weaving the fiber.

RETIRING PRESIDENT JOHN W. CLARK.

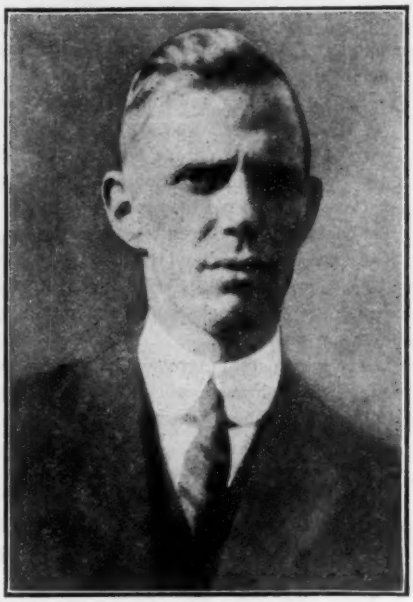
"Although the new world was discovered in 1492, no permanent settlement was made until 115 years later. The new settlers as soon as they had become fixed in their homes in Virginia began the cultivation of the cotton plant in a small way. Cotton planting on a large scale did not develop, however, until almost 300 years later, near the close of the 18th century.

"Progress in this world has often been painfully slow. Men are prone to follow in the beaten paths of their forebears without ever stopping to investigate or reason why. For more than 2,600 years men continued to separate the cotton fiber from its seed by hand. It was considered a full

year's work for a man to produce 300 to 400 pounds of lint cotton. It remained for Eli Whitney, a century and a third ago, to find and put into operation a better, easier and quicker way.

"There have been times, however, in the history of the human race which stand out as periods of exceptional mental activity. When we consider the textile industry, the 18th century might be looked upon as such a period. It was during the latter part of that century that the steam engine of James Watt, the spinning frame of Richard Arkwright, the fly shuttle of John Kay and the power loom of Cartwright were put into operation. These inventions, which were creations in the mind of man, marked the beginning of the textile industry as we know it today and ushered in a new era.

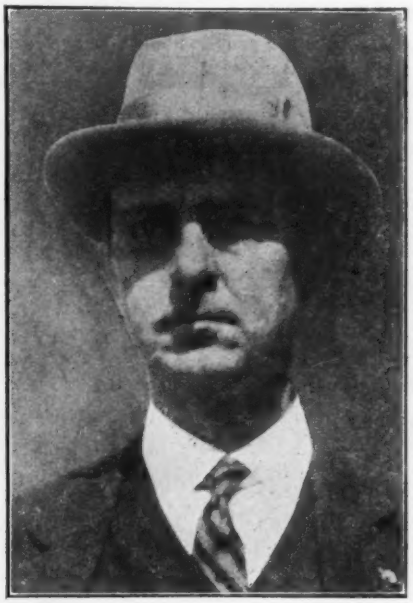
"When we realize that these inventions which are so familiar to us were made only four generations ago, we cannot keep from feeling that for many years, so far as the manufacture of textiles was concerned, mankind must have been mentally asleep. From that time to this, just a century and a third, wonderful progress has been made. New



PRESIDENT-ELECT JAMES A. CHAPMAN, JR.

intermediate processes have been introduced and many refinements have been made in old processes. Today, we, as manufacturers, are interested in determining whether we are as wide awake and alert mentally as we should be. Have our powers of observation been quickened to the extent that we really see and know what is going on around us? This is a question that concerns each of us and the industry as a whole. The textile industry still lacks a great deal of being an exact science. There are too many ways of performing the same operation. Our knowledge is not yet complete. The Southern Textile Association is bent on gaining more knowledge. It is not necessary for me to tell you that it is doing much towards lifting the entire industry to a higher plane; you see evidence of it on every hand."

At this point Mr. Clark directed his remarks to the qualifications of a real foreman. "While every foreman should be interested in studying machinery, its arrangement, adjustments, etc., also the raw material he handles, he should be none the less mindful of the human side of industry. After all it is on this element that success or failure most depends. One can almost tell from the atmosphere that surrounds a plant whether it is succeeding or not. Every foreman connected with the southern textile industry should live up to his name and be a real fore-man, or leader among the people with whom he is associated. He should first learn to think straight himself and then endeavor to assist those with whom he is associated to think straight.



MARSHALL DILLING, NEW VICE-PRESIDENT.

Every man in the industry should come to realize that the dishonest worker, the man who fails to put in an honest day's work, not only cheats his employer but every other employee as well.

"Industry is demanding a higher type of foreman today than ever before. The time is fast arriving—and we should be thankful for it—when no man will be tolerated as a foreman in a textile plant unless he be a man of high moral character. The product turned out from any factory is in a greater or less degree an embodiment of the character of the people who produce it. In proportion as we give attention to the training and character of the people who operate our plants, in that proportion can we expect confidence in the character and quality of the output to increase.

"The work done by the Southern Textile Association is beginning to be appreciated by the owners of the southern mills. The recent letters sent out by the executive committee of the American Cotton Manufacturers' Association is strong evidence of this fact. I am sure that every member here wishes to thank them for these letters and this support."

"The Southern Textile Industry Perpetuates Its Anglo-Saxons"

was the subject of the next address of the morning which was made by Joe M. Gamewell, general manager, The Erlanger Cotton Mills, Lexington, N. C. Mr. Gamewell's re-

marks, which follow, present a true picture of conditions existing in the industry in the South, and was accorded to be one of the best delivered at an Association meeting in many a moon. Said Mr. Gamewell:

"Through carefully planned and splendidly executed group discussions your organization has inaugurated a great forward movement in the practical cooperative study, analysis and solution of our many and varied textile problems. You have suddenly pulled away from the old hidebound practice of, like a terrapin, drawing within your small shell believing that within your own little orbit you knew more than your contemporaries. Yours is a broad vision of practical scientific research. Through the open forum you have thrown your own doors of knowledge wide open, you have put your cards on the table, inviting constructive criticism from your fellow workers, and I venture the prophesy that within the very near future a compilation of your findings will be universally adopted as the recognized standard both in the manufacturing and selling of our varied textile products.

"Far be it from me to offer a panacea that may completely cover the problems constantly confronting our citizenship in maintaining a proper balance of human relationships throughout our vast industrial system. It is rather my purpose, at the request of your program committee, to present for your consideration a few first-hand observations of our own industry, the largest and most important in our Southland, representing a greater invested capital than any other industry, employing the largest number of workers, and consuming a decidedly greater volume of raw material than is consumed by any other textile manufacturing section throughout our entire country.

"It is not my intention to attempt the presentation of facts entirely new to you, but rather to, as briefly as possible, review for your own consideration, as well as that of the public at large, what is being done for the physical well being, mental and spiritual improvement, as well as a general plan of fair dealing between our workers, including all classifications from unskilled through to the highest executives in this great industry.

"Some twenty years or more past, when the Parkers of Greenville, South Carolina, and the Cones of Greensboro, North Carolina, first inaugurated community betterment work on a really worth-while scale, their practical vision was then largely regarded as an idealistic hobby, however, during more recent years a decided change of attitude on the part of our more progressive manufacturers has been observed.

METHOD OF EMPLOYMENT.

"A few of our larger plants have recently inaugurated employment departments whereby a complete history of each incoming and outgoing worker is carefully tabulated and filed, however, a very decided majority of our smaller organizations, where it is fortunately possible to know each individual worker, do not require the services of a special department, holding to the system of employment and discharge through foreman and superintendent. Although desirable, it is not considered feasible to give each applicant a physical examination with a view of accurately determining fitness for work prior to employing. Many plants, upon considering applicants, attempt job analysis with a view of placing prospective employee on work best suiting qualifications and experience.

"A large number of our plants have foremen's clubs, assistant foreman being eligible to membership. The executives meet at regular intervals with these clubs and thereby, through practical informal discussions, embracing every possible phase of the working organization, arrive at a better understanding so as to interpret the spirit and ideals of the organization to the workers. No question is too small to receive a fair hearing, and they range on up to the most vital points in the successful management of our mills.

SANITATION AND HEALTH.

"Flush sewerage is largely provided, with pure water for drinking and cooking purposes, piped inside of each home; in the majority of cases being supplied free of cost to the citizens of our villages.

"The homes in most of our mill villages are screened throughout, and in a few instances garbage cans are provided for each home, garbage being removed semi-weekly free of cost.

"A few plants operate modern dairy farms for the exclusive benefit of their workers, selling the milk at, or below, cost.

"The majority of our larger plants employ one or more graduate nurses, this service proving invaluable, especially so in pre-natal instruction and obstetrical attention. Our entire Piedmont region, to us the garden spot of the earth, is noted for its invigorating and highly healthful climate.

INSURANCE AND SAFETY.

"As is well known, two of our leading manufacturing states of the South, North and South Carolina, have no Workman's Compensation Act, however, as a matter of justice and fair dealing, even where not covered by employers' liability insurance, lost time and payment of all medical and surgical fees are granted. Serious injuries to workers in this industry are exceptional, and where there is hazard, safety devices are provided.

"Our larger and more progressive organizations carry, free of cost, group insurance policies on each employee to the extent of $500 to $1,500, based on length of continuous service.

THRIFT AND HOME OWNERSHIP.

"A few plants report success with local savings banks and thrift clubs, however, as a rule it is extremely difficult to impress upon our people the vital importance of a bank account.

"As to home ownership, this problem has been, and is being given general study and discussion. A recent issue of the 'News Letter,' published by the University of North Carolina, has the following to say in a leading article on this subject:

" 'There is growing concern among leading manufacturers over the home ownership question, due to its direct relation to labor turnover, to strike troubles, and to industrial security as based on stable responsible property owning and therefore conservative citizenship in industrial centers. The old attitude has been, as a rule, one of antagonism to home ownership. Industrial corporations have felt that they and not their employees should own the mill village dwellings, that this policy is essential to community morals, law and order, and in general to company regulations and control of employees.'

"All very well and good! The ownership will be only too glad to relieve themselves of the heavy burden involved in village capital investment, and would welcome with open arms the constructive genius who could solve the problem in a thoroughly practical manner. For example, the average rental charge for modern homes in our villages is $50 per annum, including in numerous instances lights and water. Able economists point to the pertinent fact that

thereby southern textile workers derive an actual wage benefit of $5.00 weekly in comparison with other industrial sections of our country. Kindly keep this actual fact carefully before you whenever relative economic income comparisons are presented pertaining to the relation of earnings and index costs of living throughout the various industrial centers. Think it over! What would it cost our people to own their own homes? And then answer in a practical way our advanced theoretical thinkers.

"I have great faith in the idea of The Village Beautiful, for where there is development of the finer things of life there will in like manner be found the basis for right thinking, stable citizenship. If home ownership can be worked out to the advantage of our workers without in any way lessening their existing comforts and privileges, I am quite sure that our industrial leaders would sponsor such a movement.

SPIRITUAL AND RECREATIONAL.

"Owing to the varied sectarian beliefs consolidated and union churches have not as a rule proven successful. The majority of plants donate real estate upon request, church buildings being constructed and operated independently by respective denominations.

"A majority of our larger plants provide and maintain buildings, either as a Y. M. C. A. or Community Club, both plans being successful. Here is found the leading social and recreational center of the community. Under the direction of community leaders bands and orchestras are conducted, athletic activities, amateur theatricals, games, patriotic celebrations, week-end outings promoted, and where there is sufficient demand, facilities for dancing are provided under wholesome environment and proper direction.

EDUCATION.

"Thoroughly modern school buildings and equipment have been provided entirely at the expense of the plant. Practically fifty per cent of the cost for maintenance and salaries is financed by the corporation.

"The new venture of vocational training is gaining ground, and the results are highly satisfactory. As a direct result of the intensive work on the part of the State Board of Vocational Training in North Carolina, there are now 2,500 working men and women, boys and girls, being taught the elements of the trade in which they are engaged, to the end that they may become more proficient in their industrial calling. One-half of the support for this work comes from the Federal Government, one-fourth from the State, the remaining one-fourth being financed by the corporation. We should by all means foster this great work and thereby educate our fellow workers and future industrial leaders *into* the industry and *not out* of it.

Concerning child welfare, the wilful ignorance as to true conditions displayed by fanatics, hailing from beyond the borders of the South, is deplorable. The attempts of these extremists to enact Federal Laws have twice been declared by eminent jurists of the United States Supreme Court to be unconstitutional; yet, in their altruistic ignorance they continue to belie and harass us. We know and love the children of our own industrial section in the sense of a large family circle and deem it the privilege of each state to care for its own internal affairs of this nature, with no outside interference allowed by those who know nothing of, and care less for, the real welfare and happiness of our pure blooded Anglo-Saxons. From the pen of Frank Tannenbaum comes the most recent libel cast upon our people. The article appears in the June issue of the Century Magazine and bears the title "The South Buries Its Anglo-Saxons." I commend this article to your attention as the most flagrant example of slander upon the purest blooded citizens to be found in any like area on the American continent.

"Tannenbaum gives us the following information:

"Not one single person of county importance has ever come from a mill village; the people of a mill village never vote, never have any political life; to escape having to pay surplus profit taxes during the war, in response to the spirit then abroad in the world, much money went into various kinds of social activities. Better homes were built, nurses

JOE M. GAMEWELL, GENERAL MANAGER, ERLANGER COTTON MILL, LEXINGTON, N. C.

were hired, schools were improved, community life was stimulated and that now much of this activity has either been allowed to die or deliberately cut off; also, a mill village has no life of its own and is a spiritual cemetery where the men and women have been lost to the world and have forgotten its existence, at the same time losing all of their freedom; and, that the mill village buries its inhabitants and hides them from the world.

"These are the things he claims we have done to our mountaineers and farmers and proceeds to call this *our problem*, asserting that we must save our own people or they will perish; and then, offers as a happy solution of our problem, that we, figuratively speaking, destroy our mill villages and then be compelled through legislation to secure our labor as other people secure theirs.

"In the span of a few years our naturally intelligent Americans, direct descendants of the original settlers who rendered valiant service in the American Revolution, have come from their mountain fastnesses, and, through their skill in spinning, designing and weaving the finest textile products, have established a prestige throughout the most critical markets.

"Trace the history of any one of us here and I am confident you will find that the majority of us are from these

very mountains, that we began textile mill work as boys. Why? Because it was an economic necessity for us to work and we chose a vocation that appealed to us and afforded the greatest opportunity for advancement.

"Our children are being reared in Tannenbaum's 'feudal' cotton mill communities, educated in cotton mill schools but when they enter the higher institutions of learning their mental, moral and athletic standing will compare favorably with children from any other like walks of life. We have emerged from the log school house, of whose products we are justly proud, to thoroughly modern educational institutions, and it is indeed a joyous sight to behold the rosy-cheeked boys and girls of our industrial communities happy at work and at play under the most wholesome environment. We cannot over emphasize the vital importance of education, and if we do not linger in our present pace there need be no fear as to future industrial upheavals in our dear Southland, or apprehensions as to our future industrial generations interpreting and supporting the Constitution of our United States.

"You, gentlemen, are the real dynamic force behind this great industry, and upon you devolves the individual responsibility of having a kindly word for, and lending a helping hand to, especially the boys and girls who within a few years must be prepared to carry forward your work. No matter how humble or how apparently exalted your respective stations in life may seem, no matter if through fortune, or if through constant application of God given talents, you may have attained a higher rung on the ladder than many of your fellow workers, may you always remember that you, too, were once doffer boys. May you be doers rather than talkers. May you have vision, real practical vision, not as philanthropists, not in a paternalistic sense, but as leaders in your own respective community, working *with* your people, not above them.

"Centralized control and discipline are absolutely necessary but the administration of such constituted authority must essentially be just, and held as a sacred obligation, until we come to appreciate, as has been said, that 'Men, including our richest men, are coming more and more to realize that the most precious, the most worthwhile riches of all, are not bank deposits but the deposits of affection and friendliness and esteem laid up by them in the hearts of their brother men.'

"The Golden Rule in its truest sense is the real unfailing light that should ever guide your pathway, as day by day you attempt in your small individual spheres to better serve your community, and in due relation to your responsibilities perform your duty in establishing proper human relationships and mutual understandings with your fellow workers."

Discussion on Carding.

Swinging into the practical discussion end of the meeting, President Clark announced as the next feature the report of the Chairman of the Association's Carding Division, B. R. Burnham. The president stated that Mr. Burnham was unable to be present, and asked L. L. Brown, general superintendent of the Clifton (S. C.) Mills, to read Mr. Burnham's report and lead the discussion to follow. The report consisted of a resume of the main points brought out at the Anniston meeting of the Carding Division on December 8th (reported in the January, 1923, number of COTTON). The report said in part:

"In presenting my report of the Anniston meeting of the Carders' Division, I wish to call your attention to the fact that this was the first sectional meeting ever held by the Association west of the Carolina line; also that this meeting was very similar in character to the first carders' division meeting ever held by the Association except that the attendance was very poor.

"Very few men were present who had ever taken part in these discussions; consequently, nearly all preparations which had been made to proceed with new questions were abandoned and many questions which had been previously discussed and practically settled were opened and rediscussed at this meeting.

"The general concensus of opinion seemed to be that too little attention is being paid to the grading and stapling of cotton before it reaches the opening room, also that the extra labor involved in opening and ageing large sized mixes is amply justified by the better running work procured and further that the vertical or Crighton opener will do the most and best cleaning with less injury to the fiber than any other cleaning agency in the mill.

"The question of beater speeds on pickers still shows a divided house as does the two or three processes of picking. Many of our members claim to be getting good results from two processes while many more will admit that they would like to have their intermediates back.

"Picker air drafts came up for discussion and a new application of the old cross or counter draft was explained and discussed at some length.

"One great cause for the variation in the numbers of yarn was found to be made by the friction shoe of the finisher picker not letting off evenly; laps which should have measured 48¾ yards were found to range from 42 to 52 yards long. On tests made after these frictions were properly set it was found that there was a normal variation from standard of about seven per cent.

"Passing on to the cards, some very good points about the laying up and piecing of laps and the effect on the evenness of the sliver were brought out. The experience of a number present who had made tests was that a licker-in speed of about 450 r. p. m. was commensurate with clean work and good breaking strength. The speeds of top flats and cylinders brought forth a majority opinion that the standard speeds get best results except in special cases.

"The drawing frame came up for considerable discussion along the line of speeds and draft and the majority were running front rolls between 300 and 350 r. p. m. while some reported an increased production and breaking strength over this speed by running it as low as 250 r. p. m. The one and two process question on drawing still seems to be very much divided; at practically every previous meeting the reported results obtained were very contradictory.

"On fly frames a number reported that they had cut down the spindle speed and taken out twist with very satisfactory results. It was generally agreed that just sufficient twist to stand the strain of turning the bobbin at the next process, without causing thin places in the roving, is the proper twist to run, and it was generally found that this small amount of twist could not be run successfully with a high spindle speed.

"In conclusion, I wish to call the attention of this meet-

ing to a simple truth which has several times been stated at our divisional meetings and is especially applicable to card room problems—all cotton mill machinery should be torn down, cleaned, inspected, and thoroughly overhauled periodically; the length of time between overhaulings should be governed by the class of work, production and local conditions which that particular machine is called upon to meet."

In starting the discussion on carding subjects Mr. Brown stated that he was acting only in the capacity of "pinch-hitter" for Mr. Burnham, but promised to do his best, and urged participation on the part of the men in the discussion.

As a starter, Mr. Brown said, "The other day a fellow came along and told me that it was a good idea to set the licker-in to the feed plate to a 5. I have my doubts about it. What do you fellows say?"

Called upon for an opinion in connection with this setting, George W. Murphy, superintendent, The Dixie Cotton Mills, LaGrange, Ga., said, "My idea is that if you want to clean it, you should set it up close, but if you want breaking strength you ought to back off. I think it depends on local conditions and the fabric you are making." Asked if he had tried a 5 setting here, Mr. Murphy replied that a 7 was the closest he had tried. He answered a question by stating he had found it weakened the breaking strength to set up to a 7.

James Smith added that several months ago he had made a test for this setting on four cards, with two cards set to a 5 and two cards set to a 12. He said the cards with the 5 setting gave a large percentage of waste but that the breaking strength was considerably lower, so they had to go back to the other setting. In reply to questions from Mr. Brown, he said his yarns on which this test was made were about 25s, and the breaking strength dropped from about 58 or 60 to approximately 52 pounds with the 5 setting. "Did you find any trouble with the heating of the wire on the licker-in?," asked Mr. Brown. "That's a pretty small place in there." Mr. Smith replied that he did not notice it. He added further that he used a 14-ounce lap with a licker-in speed of about 425 r. p. m.

"I think on general principles that we will all agree that a 5 setting is too close," commented Oscar D. Grimes, superintendent, Milstead (Ga.) Mfg. Co. "At my mill I am on coarse yarns and use a heavy lap and put through a lot of cotton. I wouldn't attempt a 5 setting. I have gone closer than a 12—that is what we use—and I found the breaking strength too low. We card awfully heavy, and what we are after is breaking strength."

"We get best results at a 7 for this setting," said W. L. Phillips, superintendent, Social Circle (Ga.) Mills, "on a 14-ounce lap, for 22s yarn, carding about 150 pounds per day of ten hours. We did card 215 but we got on a government order and came down on it."

"I would like to ask if Mr. Phillips is working for breaking strength or cleanliness," requested Mr. Grimes.

"Breaking strength," replied Mr. Phillips.

"And you get it with a 7 setting?" asked Mr. Brown.

"Passes government standard," was the reply.

"Mr. Phillips is one of my neighbors," said Mr. Grimes. "I would like to ask him how near Draper standard he comes on breaking strength." Mr. Phillips replied that he is above the old standard and is about four pounds under the new standard which he said is about 87. He added, in reply to queries, that he uses strict middling and middling cotton, one-inch staple.

"It seems to be the concensus of opinion, with the exception of isolated cases as with Mr. Phillips, that the closer we set the licker-in to the feed plate, the more we get cleanliness at the sacrifice of breaking strength," said Mr. Brown. "I dare say if Mr. Phillips should try it with a 14-ounce lap he would get a little better breaking strength with a wider setting."

M. T. Poovey, Henry River Mills, asked for the best setting for 1¼-inch cotton for 40s to 50s with regard to breaking strength. "I have my cards set at 7, with the doffer at 7 also, and am getting an extra good breaking strength—136 on 40s two-ply yarn. I have tried a 10 and a 12 setting, and get better results setting to a 7." He said he runs a 12-ounce lap, 65 pounds to the card per day.

"We do not spin as coarse as 40s," said J. W. McArver, of Gastonia, in discussing Mr. Poovey's question, "we run from 60s to 80s—our coarsest number right now is 68s. We set the licker-in to a 7, and have never had any trouble with breaking strength. The best plan I have found is to set the flats down to the cylinder, to a number 7." He is using a 12-ounce lap, carding 140 pounds a day.

Mr. Cannon, of the Rosemary Manufacturing Company, asked for the best setting to get the neps out of 22s warp yarn, on a 40-inch card, running 140 pounds. He said he had reference to the flat settings.

The chairman asked Mr. Phillips to discuss this. "Can't tell him," was the reply. "Haven't got mine out. The best thing I know of is to keep good sharp clothing and set it close as you can get it."

J. V. McCombs, superintendent, Buffalo Mill, Buffalo, S. C., who was sitting next to Mr. Cannon, said he had asked him what cotton he was using and Mr. Cannon had said local cotton about one-inch. "We hardly ever have trouble with neps in local cotton around here," said Mr. McCombs, "but when it becomes necessary to get the neps out of the cotton and there are no other troubles that multiply those neps, a long draft is the big essential thing in getting them out. There is a man here who will back me up when I tell you that I have seen a card with a draft of 140 inches. You doubtless will ask, 'What about the breaking strength?,' but I have seen that. A long draft on a card is better where you are bothered with neps, but I believe that if there is any man bothered with neps he should set to a 12 on the feed plate and the flats to a 7 and the doffer to a 7—if he still has neps, on local cotton, I believe his trouble is back in his pickers. Mr. Cannon has the Kirschner beater. My experience is that when a man has the Kirschner beater he is generally scared to set it up close, and sets it off, with the result that the Kirschner beater itself makes the neps. Dull points on the Kirschner will do the same thing by curling the staple. You may think the cards are not taking the neps out when the pickers are putting them in."

"How close would you set a Kirschner to get the neps out?," was asked. "I would set the Kirschner at least 3/32," replied Mr. McCombs. "That's from the feed roll. And it will not hurt you. I have run a Kirschner on 1⅞-inch Sakelliedes cotton set at 3/32."

"Ever run the Kirschner on intermediates and finish-

ers?," asked Mr. Grimes. "Yes sir," said Mr. McCombs, "with very good results."

Mr. Hooper, of Thomasville, pointed out that checking up on the card grinders will go a long way toward eliminating neps. He said sometimes when a man thinks he is getting one setting in reality a different one is being used.

At this point Mr. Brown brought up the question of roll settings, starting at the drawing. Called upon in this connection, J. W. Hames, superintendent, Exposition Cotton Mills, Atlanta, said that "recently we went over all of our rolls, starting at the drawing, and on the drawing on our back rolls we set them to the second rolls ⅞ of an inch longer than the staple and came up to the front which we set ⅛ of an inch over our staple. On the slubbers we set the front roll to the middle ⅛ of an inch longer than the staple; on the intermediates we came on to 3/32 of an inch longer than the staple: and on the speeders about 3/32. With these settings, after some experiment, we find it gives us a better breaking strength than any we had secured previously." Marshall Dilling, chairman of the board of governors of the Association, asked if these settings were from center to center or from bite to bite of the rolls. Mr. Hames replied that they were from center to center. "That would be pretty close to the staple from bite to bite," observed Mr. Brown.

The next subject, brought up by Carl P. Thompson, superintendent, The Trion (Ga.) Company, was with regard to whether it is good practice to leave out one process of picking when the Crighton opener is installed. Mr. Chapman, when asked for a statement, said he could furnish no figures, as there were only two processes of picking in the mill when he took it. He stated, however, that after installing the Crighton opener, he secured much better picking.

J. O. Corn, superintendent, Pacific Mills, Columbia, S. C., stated they were running with two processes of picking with the Crighton opener. Mr. Grimes asked if, when they installed the vertical opener, did the vertical opener remove sufficient waste to allow the elimination of one process of picking. "Really, our lay-out is not what most of you would call two processes," replied Mr. Corn, "because we have a double beater breaker; we have three beatings just as before. We took out the intermediates but the breaking strength is about the same. The evenness is not quite so good." He said they have the No. 4 bale breaker with a single vertical opener, and that the unevenness in the yardage is about the only difference he can see.

"Did the amount of waste taken out from under the vertical opener and pickers equal or was it greater than that formerly secured?" asked Mr. Grimes. "It was just about the same," replied Mr. Corn. "Should be greater," said Mr. Grimes, but Mr. Corn said he did not think it was. He said, in reply to Mr. Grimes, that he had no evener on the breaker picker. He tests yardage and lap for evenness, he continued in response to another query from Mr. Grimes.

Mr. Grimes pointed out that in his opinion the tests for unevenness should not be made from the weight of the lap, but from the finished roving. He asked Mr. Corn concerning the evenness of the finished roving after the change was made, and the reply was "I believe it is more uneven, although I would not be positive about it. Our breaking strength has not decreased." He said that he knew the card sliver was more uneven.

Mr. Grimes asked whether Mr. Corn had reduced the speed of his beaters. The reply was on the Kirschner beater on the finisher, the speed had been cut from 1,250 down to 1,040, but that this was done before making the change.

As to the amount of leaf and trash and lint, etc., taken out before and after the vertical opener, with one process less of picking afterward, Mr. Brown said that while he did not have the exact figures, "I do know that we take out less motes from the pickers and less motes and fly from the cards since installing the vertical opener, but the total waste taken from all is considerably greater. We take out 2½ per cent, using three vertical openers in tandem. We use strict middling inch cotton." He added that the card room sweeps and spinning room sweeps had decreased since installing the vertical openers and that the increase in foreign matter taken out was in the vertical opener.

W. P. Hamrick asked if, in addition to cleaning, there was any advantage in running vertical openers in tandem, and Mr. Brown said that in his opinion it opens the cotton more and aerates it for better processing later on.

The final question considered in the carding discussion was the variation caused in numbers through the finisher picker not letting off evenly, as brought out in Mr. Burnham's report of the Anniston meeting. In this connection, Mr. Hames said that "I had a man from New Bedford going through my mill a few months ago, and he was telling me of an experience he had in this connection. He was using the leather friction and said he had trouble with variation in the length of the lap. He took off the leather and concaved his friction shoe and inserted cork, and he said that this entirely eliminated his trouble, and that now he is getting good results with a fairly uniform lap. I have ordered some cork and intend to experiment along this line."

Because of limited time it was necessary to bring the carding discussion to a close at this point and the president introduced Carl R. Harris, Chairman of the Spinning Division, who made the following report on the recent meeting of his division at Spartanburg:

Report on Spinning.

"Our third spinners sectional meeting was held in Spartanburg, S. C., on Friday, April 6th, with a representative attendance of approximately 150.

"Doubtless the originators of these sectional meetings, have been well pleased with the outcome of their idea. Each succeeding meeting brings forth new participants in the discussions. Also, a greater number of men of their own accord, bring up questions which they wish discussed, in order to get the opinions of others.

"In making this report, I will take up the subjects discussed and give you the concensus of opinion as nearly as possible. The textile papers had a detailed account of the meeting and doubtless most of you have read it. If any have not I would like to suggest that you get a copy, not only of that meeting, but all the sectional meetings and file them away in your library for information. As time passes and we progress onward it will be very interesting to get these reports out and read them over and note the advances made.

"No. 1. Have you had any experience in having a cer-

tain worker do all the training of help?

"Very few of us have given the proper time and attention to the training of new help, considering the fact that as a usual thing the help which we train stay with us longer and give better service. The old method of putting a girl with some one she knows, to teach her, requires quite a bit of time, and very often they will get in a rut that is hard to get them out of.

"The fact was brought out that a few are trying a method of having one spinner do all the training. This was very heartily endorsed by those who have been experimenting along this line, and the opinion is that considerable time can be thus saved. Also, while the majority still have this trainer on full work, the natural assumption is that still better results can be secured by giving them less work to do, in order that they can give more time to the learner.

"No. 2. What experiences were encountered in putting hank clocks on spinning, and what benefits were derived from them?

"This question was discussed at length, and considering the benefits to be derived from the use of hank clocks, it was rather a surprise to find that so few mills are paying by the hank. To cite the benefits to be derived from using clocks would require considerable time.

"It is a known fact that few human machines will continue to operate at full capacity for any great length of time without the assistance of some compelling force other than their own energy. When we do find one we have a genius. I don't suppose it would be necessary for any of *you*—but a 'Brain-Clock' would probably do me good at times.

"The hank clock is a natural incentive for the doffers and spinners to do more. When you are paying by the hank the help gives more attention to their work and strives to turn off more production, because, they realize that they are getting paid in accordance to the output of their machines. Some men stated at that meeting that the hank clock had increased their production, and they were not even paying by the hank. Is it not natural that better results could be secured if they were? I know of one instance where the spinners asked for a tooth of twist to be taken out. It would hardly be necessary for me to tell you that they were being paid by the hank.

"I do not mean to say that with the hank clock it is possible to get maximum production without any effort on our part, for it is not. But with the same amount of energy expended in conjunction with them, you can materially increase your production and lower your cost per pound. This can readily be seen if for no other reason than that you can quickly detect your losing places by watching the hank board. I do not hesitate to say that any man who has run a job where they paid by the hank, would not be satisfied to go back to paying by the side.

"It is advisable for any mill preparing to go on paying by the hank to go slowly, as a mistake or two to start with would probably demoralize the whole plan. If you have clocks on your frames, start in keeping a record of the production. While you are doing this it will give the opportunity to get the second hands and section men in a receptive mood for the change, and in turn use them to get the others in a receptive mood. By this time you have a record of production long enough to set a rate of pay.

"No. 3. What are the average amounts of variation existing in yarns?

"The causes and amount of variation in yarn have been discussed at several previous meetings, especially at our second meeting at Gastonia. At that time we were unable to get any definite information as to the amount prevailing. The meeting was more or less suprised at an admission by one of a variation of 17¼ per cent on 41s filling. Also, at that time it was brought out that the usual method of sizing only a few bobbins at a time was doubtful in its merits, and the men were all requested to size every bobbin from the side of a frame and make a report on their findings. Just before the Spartanburg meeting David Clark very kindly aided us in this plan by sending out a blank for the recording of these tests and we received quite a few answers.

"You have all read the reports of this meeting and doubtless were surprised to note the great amount of variation that was shown by some. A variation of 15 to 20 per cent was not infrequent, while there were several above that, notably, a variation of 27½ per cent on 29½s warp and 30¾ per cent on 40s filling.

SECRETARY A. B. CARTER.

"It was suggested and adopted that we send out another blank and incorporate in this a questionnaire to find out the local conditions, as nearly as possible, by giving the hank roving, roll speed, spindle speed, size ring, gauge, band or tape drive, etc. We have been unable to get this blank out so far, but expect to do so in the near future, and when we do I wish to urge that you all cooperate with us in this matter, by making good, fair tests. The majority of those present at that meeting said they would send in a report and I trust that many of you who were not there will do so.

"No. 4. What causes this variation in yarn?

"The tendency has been to pass the buck to the carders, and I need only to refer you to the reports received at the carders' meeting at Anniston, Ala., to show you that a large amount of variation is being made on cards, pickers and drawing. We can not, however, dodge the fact that a great deal of unevenness is caused in the spinning room.

"I have been in rooms and found the carder and spin-

ner hardly on speaking terms because the spinner thought too much twist had been taken out of the roving, causing it to break back, stretch, etc. On examination I found that many of the roving skewers were worn flat on the bottom, and in a lot of cases the steps were gone and the skewer was running on the creel board. Can you blame the roving from breaking back and being stretched?

"There are many small things in the spinning room that will cause bad work, such as slack bands, improperly covered rolls, worn neb bars, stirrups rubbing steel roll, weight levers improperly set, spindles not properly set and plumbed, humidity, etc. Some might say that humidity affects this more than any other one thing, and it does affect it very much. However, in making tests under government supervision it was determined that it is water the mill is getting on humid days, instead of cotton. In my estimation improper oiling causes more unevenness and bad running work than any thing else, and it is as good a salesman as the supply man could want.

"No. 5. Will ball bearings on warper measuring rolls materially reduce the waste on the run outs?

"I particularly wish to bring this question to your attention as it has been discussed at several of our meetings, and because of the fact that waste is no small item in the operation of any mill.

"Some of those who testified in behalf of ball bearings at our first meeting in January, 1921, claimed as high as 50 per cent reduction in waste. At our last meeting they were very strongly recommended by several, with claims of from 25 to 50 per cent. The recommendation, it seems, should well warrant every mill that has not already done so, looking into the matter.

"Several precautionary measures such as hanging a weight on the clock trigger or connecting a spring to it, were recommended. Where it is possible I think it would be well to have one person set all clocks, start the warper and see that the reed is properly adjusted. Where this is not applicable a very good plan is to have a small red flag attached to the side of the machine, and when the warper hand starts the machine have her raise this flag. It is to stay up until the section man can get to it and see that everything is all right and the reed is properly adjusted. When he finishes his inspection *he,* not the warper hand, lowers the flag. This arrangement enables the overseer to keep in touch on his frequent trips through the room.

"No. 6. Arrangements for keeping drop wires clean on warpers.

"The question was raised as to the merits of a traveling electric fan for keeping the drop wires clean on warpers. No one present seemed to have had any experience with this particular dvice. However, two very good arrangements for this purpose were mentioned. One was a fiber fan extending the full length of the warper and fastened in two brackets with bearings. It was driven with a small belt from the tight pulley. The other, and the one which attracted most attention, was the extension of a compressed air hose from the ceiling down over the drop wires. This hose has a nozzle on the end and when a thread breaks and the warper stops, the operative releases the air and blows across the drop wires once. This would seem to be a very practical and efficient arrangement as most mills have compressed air.

"No. 7. What is a conservative cost per month for leather rolls per 1,000 spindles?

"This question has been brought up at several previous meetings but no one seems to have had any information at hand. At this time we received several reports ranging from $7.50 to $7.75.

"Several things affect the cost of rolls, such as the grade of cloth and skin used, and whether the cushions are to be removed at each covering. It was considered, I believe, that the best grade of cloth and skin is the most economical. When a good grade of cloth is used I hardly think it would be necessary to place a new cushion on at each covering.

"No. 8. What is your experience in reversing double-flange rings?

"The concensus of opinion is that a turned ring will never give as good results. A portion of the temper has been drawn out of course and it will take longer to polish. However, quite a few present had turned their rings and were getting very good results. Where a mill already has double-flange rings it would be economy to turn them instead of buying new ones. By giving them the proper cleaning in turning they will probably last for a number of years. Some stated they had secured very good results by boiling the rings in water and concentrated lye, or washing them in gasoline and then polishing them with a brush.

"Quite a few mills are buying single-flange rings, while some are buying double flange with one side unfinished. When the finished side wears out they send the ring back to the manufacturer to be burnished. The cost of doing this is comparatively small. You can also have the rings you now have sent back and polished when you desire to turn them over.

"No. 9. Merits of the No. 1 and 2 flange rings.

"The merits of the No. 1 and No. 1 flange ring have been brought up for discussion at practically very meeting we have held. About the time of our first meeting quite a few mills were putting them in, but they had not gone far enough to know which did give the best results. However, it is generally conceded now that the best results are secured with the No. 1 flange, and most mills are buying them. For this reason I wish to call to your attention that one or two mills have discovered that their No. 1 flange rings are wearing faster than they think they should. Understand, this has not been noticed by many, in fact, the majority have not noticed any wear, and it is probable that in these few isolated cases they have received defective war material. However, I feel that it will be well for us to watch this feature as there are several reasons why this could be the case.

"I will also suggest that the mills affected in this manner will do well to watch some of the things that affect the wear of rings. Let me call your attention to a question which was in the first spinning questionnaire sent out by the Association. 'Do you level your ring rails cross-wise as well as length-wise?' The answers to this question show that very few mills are doing this, while they realize that it should be done.

"When the ring rail is not setting level you have a high and low side to the ring, this will cause an uneven drag on the traveler and consequently will wear the ring more in

one place than another. This condition is also brought about when the spindles are not properly set and plumbed. Getting the proper circle traveler is also a very important consideration. For the information of those who are possibly buying new rings, it would be a good idea to make a gauge and test the rings for roundness as you receive them, as you will quite frequently receive some that are oval shaped.

"By giving the travelers the proper attention we might effect a saving, not only in rings, for the reports we have received up to now show a cost for travelers ranging from $1.68 to $6.00 per 1,000 spindles per year.

"No. 10. Where do the pieces of yarn from two inches to five inches long, coming up behind the drop wires, come from?

"These short ends are made by the spoolers, creelers, warper tenders and possibly some are made by the doffers double piecing. The spooler hand keeps the cut off ends around her finger until she gets a hand full, and then she takes them off. I have seen quite a few of those short ends catch on the running end and go around the spool or catch in the guide. Creelers quite frequently drop the short ends when they are tying in a creel and they lodge on the ends or spools and go through. While a careless warper hand will very often tie in an end and drop the short piece on the beam. This can only be stopped by eternally staying after it in the spooling and warping department.

"No. 11. What is the lowest twist multiple we can use on 30s warp and get good weaving?

"This is a question brought up which you readily see could not be fully answered, as the local conditions would almost wholly determine this. For this reason you doubtless wonder why I have mentioned it. But if possible I wish to show you that it pays to experiment. Lots of mills are probably running excessive twist, who, by conducting careful tests, would find they could run less twist with better results and secure an increase in production.

"The mill making this inquiry was running a twist multiple of 4.75. While a mill in close proximity, using practically the same grade of cotton and on similar goods, had by experimenting carefully over a period practically six months, found that they could get the best results with a multiple of from 4.60 to 4.65. Is there any reason why we should be satisfied with what has grown to be a custom through many years use, unless we know it to be best?"

Lack of time prevented an extensive discussion on spinning. The first question asked was by Mr. Lockman, of Lockhart, as to what percentage of waste on a section beam comes from run-outs on the warpers. Mr. Grimes was called upon, but stated he runs twisted yarn on his warpers. He said, however, that he uses an individual rope for each beam and that he gets less waste by doing this. He added that they replace all ropes at the same time.

F. Gordon Cobb, general chairman of sectional committee work for the Association, read reports from a 30s yarn mill that showed a waste of 3¼ pounds on six beams with a total number of 2,040 pounds; on another set of six beams, same number of pounds, there was a total waste of 9.25 pounds; on another set was a waste of 3¼ pounds, making an average waste per beam of .87 pound.

Mr. Chapman said he had heard of a mill taking the weights off the beams on the slasher and putting on brakes, so that when the slasher stopped the brakes stopped the beams.

In connection with the elimination of waste on the slasher, Mr. McCombs explained a system of having the warper hand put a piece of gummed tape across the beam after pulling the knots through from creeling, and then making the slasher tender run up the beam until this tape appeared on the slasher, thus eliminating the waste of good yarn.

Mr. Lockman stated that in his opinion 90 to 95 per cent of the waste made on the slashers is caused from the stands on the slasher where they are screwed up. He said that if a man will examine the stands he will find some cut in about ¼ to ½ an inch, and "you know it takes friction to do that."

The last question asked was whether it would be possible to secure better than 160 pounds breaking strength on 13s yarn for tire fabrics. Mr. McCombs said he had answered a similar inquiry by mail and had recommended a reduction in the licker-in speed as one of the main things in a lay-out for making this yarn for tire fabric. He recommended cutting down from 420 to 270 or 290, he said. He said the question of cleaning might arise, but pointed out that yarn for tire fabric is usually combed, but if it is not, it is a matter of settings on the pickers, of blending and cleaning the cotton.

Mr. Harris raised the question that if reducing the licker-in speed would be good for tire fabric mills, why not for sheetings, and Mr. McCombs replied that it will "if you are willing to put in the cleaning process necessary and willing to take out the waste in the pickers and vertical openers, and not depend on the licker-in to break up the seed and motes." He said that on coarse work he had gotten down to 310 r. p. m. on the licker-in with good results.

Friday afternoon was left open by the program committee, no session being scheduled. The delegates accordingly put in the time making trips around the many points of scenic interest, including the Grove Park Inn, the Vanderbilt estate, and other famous places. Golf was also enjoyed by a large number of the men.

The Association Banquet.

At 7:30 o'clock on Friday evening, the members assembled in the main dining room of the hotel for the annual banquet. An enjoyable meal was served, following which the fellows joined in singing some old-time melodies, led by H. E. Runge, assistant superintendent, The Trion Company, Trion, Ga. Hon. John G. Carpenter, of Gastonia, N. C., was the speaker of the occasion.

"Thirsty Cotton"—A Moving Picture.

At the conclusion of the banquet, a new release of the film "Thirsty Cotton" was shown under the auspices of the Parks-Cramer Company, who devised and are exhibiting the film. Among the new features included in the picture shown this year was a large portion devoted to the advantages of automatic regulation, and graphic and pictorial examples citing the effect of automatically regulated humidification were displayed. Thayer Francis, of the Fitchburg office of Parks-Cramer Company, was in charge of the exhibition, which was witnessed by a large gathering.

The Saturday Morning Session

was the business meeting of the Association. The first feature of the program was an address by R. W. Jennings,

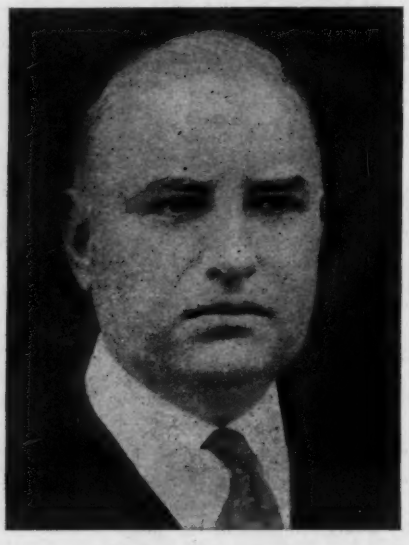
general chairman of the Textile Operating Executives of Georgia, who outlined to the members of the Southern Textile Association the method and plan of formation and the progress made by the Georgia organization.

Mr. Jennings said in part:

"It is a pleasure to have this opportunity to outline to the members of this Association, and particularly those located outside of Georgia, the activities and purposes of the Textile Operating Executives of Georgia, an organization formed by the managers, superintendents, department heads and other operating executives of the Georgia mills, the prime object of which is the discussion of practical problems of the mill in the same manner as that adopted at the sectional or departmental meetings of the Southern Textile Association, and to develop a better and more widespread acquaintance among the mill men of the state.

"To do this it will be necessary to go back and relate briefly the story of the beginning of the organization.

"Before the Wrightsville Beach meeting of the Sou



R. W. JENNINGS.

thern Textile Association last June, Fred Schaefer and Oscar D. Grimes arranged for a special car to carry a number of Georgia men to and from the meeting. While there, the men who went on this car noticed the comparatively small number of Georgia men who were in attendance, and a large percentage of those who were present received their first personal insight into the discussion idea, as it was so splendidly carried out during that convention.

"It was also pointed out that the Georgia delegation to the various sectional meetings held under the direction of the Association was comparatively small.

"On the Pullman coming home, the men, realizing the value of the practical discussion meeting idea, discussed the matter seriously. It was thought that this apparent lack of interest on the part of the Georgia men as a whole in the Association meetings was probably from two main causes: First, the long distance required for the men to travel to reach the cities in which most of the meetings were held, which entailed considerable expense and a long absence from the mill; and second, that the type of discussion at many of the sectional meetings was on yarns and fabrics of an entirely different character from the average being made in the mills of Georgia. And, I may say in passing, that you may have observed that the geographical location of the mills in the South seems to have influenced the type of goods made, speaking generally. First, there is North Carolina, with a large percentage of her mills on the finer counts of yarn; then comes South Carolina, with a majority of print cloth and medium goods plants; and then Georgia, which seems to lean more to the heavier numbers of goods and yarns. Another point brought up during the meeting was that a number of the Georgia mills do dyeing, while at the sectional meetings of the Association no discussion has been devoted to this phase of work.

"Out of this discussion on the train returning home from Wrightsville Beach meeting, the opinion was unanimous that in consideration of these facts, if meetings could be held, convenient to the Georgia mills, and in which the discussion was conducted on classes of work relating more nearly to the local conditions in the state, that a greater interest would be aroused among the mill men in the practical discussion work.

"Therefore, at an impromptu meeting held in the Pullman car that night, at which George W. Murphy, superintendent of The Dixie Cotton Mills, LaGrange, Georgia, was named temporary chairman, an organization committee was appointed by him to work out the details and to ascertain the possibilities of and the demand for such a plan of meetings in Georgia. This committee consisted of Oscar D. Grimes, superintendent, Milstead Manufacturing Company, Milstead, Georgia, chairman; W. H. Jones, superintendent, Valley Waste Mills, LaGrange, Georgia; C. R. Brown, superintendent, American Textile Company, Ateo, Georgia, and George W. Murphy.

"At its first meeting in Atlanta, this committee felt it would be advisable to get the approval of the financial executives of the mills with regard to the promulgation of this plan. Accordingly, representatives of the committee appeared before the Executive Committee of the Cotton Manufacturers' Association of Georgia, and received its endorsement by a unanimous vote. Mr. P. E. Glenn, secretary of that Association, mailed a letter to the head of each Georgia mill stating that the executive committee had endorsed the move, and urging cooperation on the part of the mills in the movement.

"Simultaneously, Mr. Grimes, as chairman of our committee, sent a letter to the superintendent of every mill in the state in which he outlined the proposition. He also enclosed a questionnaire blank on which the superintendents were to indicate their opinion and attitude with regard to the idea.

"The response to this inquiry was very encouraging to us, and the men were most enthusiastic over the idea. We had letters from several mill presidents in the state personally endorsing the move.

"This response was so favorable that the committee called a meeting of the mill men interested in Atlanta on September 19, at which plans were perfected for the organization. The resolutions or tenets adopted at that meeting were mailed to every elected officer in the Southern Textile Association.

"Officers were elected at this meeting. I was made general chairman; Carl P. Thompson, superintendent, The

Trion Company, Trion, Georgia, vice-general chairman; Robert W. Philip, associate editor, COTTON, Atlanta, was made secretary-treasurer, and an executive committee consisting of the following five men was selected: H. O. Davidson, suprintendent, Eagle & Phoenix Mills, Columbus; R. M. Matthews, superintendent, Peerless Cotton Mills, Thomaston; W. L. Phillips, superintendent, Social Circle Cotton Mills, Social Circle; I. B. Grimes, superintendent, Elm City Cotton Mills, LaGrange, and G. A. Franklin, superintendent, Sibley Manufacturing Company, Augusta.

"Having this definite organization, we were then enabled to move forward in the work. A constitution was adopted by the executive committee, and I can describe the purpose and plans of the body by reading excerpts from that.

"One section states 'the objects of this organization are the promotion of good fellowship and acquaintance among the operating executives of the textile mills in Georgia; the conduct of practical mill discussion between the mill men, thereby giving an interchange of ideas and experiences among its membership on subjects relating to textile mill operation; and the promotion of such movements as tend to the benefit and advantage of the textile industry and its operatives.'

"It was decided that 'two regular meetings shall be held each year: The first in the spring, for the discussion of subjects relating to power, carding and spinning, at which meeting the operating executives interested in these departments are requested to be present; the second to be held in the fall, for the consideration of discussion pertaining to weaving, finishing, twisting, dyeing, bleaching, etc., at which the operating executives interested in these departments are requested to be present.'

"A committee on carding and spinning, with J. W. Hames, superintendent of the Exposition Cotton Mills, Atlanta, as chairman, was appointed. This committee compiled a questionnaire on carding and spinning which was mailed to each superintendent in the state. The replies received formed the basis of the report of the chairman on this subject. It was felt that in addition to the benefit received through the return of answers, the sending out in advance of the major questions to be taken up at this meeting had another advantage, in that it acquainted the men with the subjects to be discussed, and allowed them to prepare themselves for the discussion before they came to the meeting.

"The first discussion meeting was held at the Georgia School of Technology, in Atlanta, on Tuesday, March 13 of this year, and the attendance was very gratifying to the officers. Discussion on opening, mixing, picking, carding and spinning was conducted under the leadership of Mr. Hames, and the expressions which we have received since from some of the men who were present and took part in the discussion have proved the success and benefit. I wish I had the time to read some of these letters, as they are very interesting.

"That brings the matter up to the present. Our plans are for a meeting this fall to discuss the subjects not taken up at the spring meeting. The date for this has not been set but it will probably be held in Atlanta. I might say, with reference to the meeting on carding and spinning, that the interest taken by the men in the discussion was surprisingly encouraging; we found that we were pressed for time to cover the questions planned, and in fact, did not get to complete but a comparatively small number of them due to the whole-hearted participation of the men in the meeting.

"That outlines to you the organization as it now stands, and now, in closing, I should like to say a few words to correct any possible misconception that may have been received by some as to the intent and purpose of the proposition. In the first place, the Textile Operating Executives of Georgia was *not* organized to conflict with the Southern Textile Association. It is rather to aid and augment this Association. It was formed for the reasons which I have explained to you—the small number of Georgia delegates attending the sectional meetings of the Southern Textile Association; the value of such discussion; the closer proximity of meeting place to the Georgia mills, with less expense and loss of time from the mill when attending the meetings; the advantages of the ideas of the well-informed Georgia mill men who do not attend the sectional meetings; to develop a better fellowship and broader acquaintance among the mill men of the state; and to create more interest in and cooperation with the meetings of the Southern Textile Association.

"It is our belief that a state organization of this kind will arouse among us a greater interest in the practical discussion work, which will work toward a better understanding on the part of the men of the value of such gatherings, and also develop among them and their mill officials a realization of the importance of the work the Southern Textile Association is striving to do toward establishing the proposed Textile Foundation."

Following Mr. Jennings' address the meeting was opened for the presentation and description of inventions and improvements by southern mill men. The first speaker was R. P. Sweeny, of Greenville, S. C., who described the Sweeny "Pneu-way" cleaner, which is a compact, portable cleaner operated by compressed air, performing its purpose by air suction instead of blowing.

W. C. McAbee, of the American Spinning Company, Greenville, S. C., presented a split hub for loom pulleys, invented and being marketed by A. P. Greer, of Greenville, S. C.

W. W. Cobb, superintendent, Norris Cotton Mills Co., Cateechee, S. C., described a new tension for filling wind on warp.

G. C. Truslow, of Draper, N. C., explained an automatic mixing and blending machine for cotton, wool or other textile stock. The machine is located in the center of the room and the cotton is blown through a fan from the bale breaker and automatically distributed over the floor, being aerated at the same time. It is designed to prevent uneven shades and other difficulties caused from uneven mixing. No labor is necessary except the man feeding the bale breaker.

A feeler box screw to be used in double and three-bank stop motions on looms was exhibited by J. H. Burgess, of Simpsonville, S. C. The head of the screw is made larger than the ordinary. W. E. Crane is the inventor, and the screw is marketed by the Everhold Feeler-Bar Screw Company, Simpsonville, S. C.

W. E. Beattie, president of the American Cotton Manufacturers' Association, who, with Winston D. Adams, the

secretary-treasurer, was attending the convention, was called upon for a few words, and assured the Southern Textile Association of the fullest interest and cooperation from the American Association during his administration as president.

"Individualism Versus Socialism" was the topic of the next address of the morning, the speaker being Charles E. Carpenter, of Philadelphia.

F. Gordon Cobb, general chairman of the Association's sectional committee work, reported for the committee which appeared before the Board of Governors of the American Cotton Manufacturers' Association and received the support of that body in the plans for the Textile Foundation.

The Association then went into business session, and elected the following as a Textile Foundation Committee: F. Gordon Cobb, chairman; W. M. Sherard, David Clark, Marshall Dilling, and Oscar D. Grimes. The report of the resolutions committee was next made, which included a resolution expressing the thanks and appreciation of the Southern Textile Association to the Board of Governors of the American Association for the support and encouragement of the Textile Foundation plans.

The election of officers was next held with the following results: President, James A. Chapman, Jr., of Inman, S. C.; Marshall Dilling, of Gastonia, N. C., vice-president; Oscar D. Grimes, of Milstead, Ga., chairman of the board of governors.

The following new members were elected to the board of governors: R. W. Jennings, of West Point, Ga.; L. L. Brown, of Clifton, S. C.; W. H. Gibson, of Union, S. C.; and T. B. Stevenson, of Caroleen, N. C.

It was decided to hold the fall meeting of the Association in August, at a date to be set by the new president.

James A. Greer next presented the Association medal for the retiring president to John W. Clark, and the meeting was adjourned.

North Carolina Mill Men Meet

Cotton Manufacturers' Association Holds Its Summer Convention at Winston-Salem

It was an altogether enjoyable occasion when the members and guests of the Cotton Manufacturers' Association of North Carolina met in Winston-Salem on June 15 and 16 for the 17th summer session of that body. The attendance of mill men and guests was large, and the program of the meetings and the entertainment made the affair most successful.

The First Session

was called to order on Friday morning, the 15th, by Bernard M. Cone, first vice-president, who announced that President James H. Webb was prevented from attending by illness. Rev. Z. E. Barnhardt, pastor of the Centenary Methodist Church of Winston-Salem, opened the meeting with prayer, and James G. Hanes, mayor of Winston-Salem, welcomed the visitors to the city. Vice-President Cone responded on behalf of the visitors. Mr. Cone appointed the following committees: Nominations: Arthur M. Dixon, W. D. Briggs and C. G. Hill; Resolutions—T. H. Webb, S. P. Cooper and W. L. Long.

The first speaker presented by Mr. Cone was E. S. Parker, Jr., of Graham, N. C., who spoke in connection with the need for more attention being paid the operation of governmental affairs on the part of business men. In beginning, Mr. Parker outlined the numerous taxes borne by the manufacturers of the state—there are, he said, the ad valorem tax to the county, a municipal tax, a mill village tax in the form of street assessments, a 12½ per cent Federal tax on profits, and, if a corporation, a three per cent tax to the state, and then a surtax on dividends. He also called attention to the numerous reports that the manufacturer must make to the state and government, including the franchise tax, the capital stock tax, etc.

In reviewing these burdens, Mr. Parker firmly stated that no cotton manufacturer wants to avoid the payment of a just tax, that he is glad to bear his share of the load, but that he wants the burden equitably distributed and fairly administered. He urged close observation on the part of the manufacturers of all matters relating to taxation.

Further emphasizing the necessity for watchfulness in the proper protection of their interests, Mr. Parker recounted the various laws affecting the cotton manufacturer—the number of hours that constitute a week's work, and a day's work; the working of females and minors; sanitary conditions—all of these are regulated by law in the state, it was pointed out, but that the present regulatory statutes are but an index to what may happen unless the manufacturer takes an interest was the warning sounded by the speaker.

Mr. Parker discussed the North Carolina child labor law, pointing out that it is considered ideal in every respect by the lawmakers of the United States. He declared that the efforts of the North Carolina manufacturers, which were successful, against the proposed national legislation in this respect were based on the belief that they had a still better law in their own state.

Discussing again the need for more manufacturers taking interest in governmental affairs, Mr. Parker stated that the last general assembly had in it only two representatives connected with the textile industry. At this particular time, he declared, the state is spending immense sums of money in the building of good roads, schools, improving state institutions and in other progressive movements, and that the cities and counties are likewise spending large sums, and inasmuch as a large portion of this revenue is paid by the manufacturers, it is to his interest to have a hand in its expenditure.

Address of Vice President Cone.

Mr. Cone, in the absence of President Webb, next presented an interesting report as vice-president, saying in part:

"Business, as you know, was good during the fall and the first part of this year, but a late spring, cold and wet weather, with its consequent depression in the retail trade and an unexpected—and, as many think, an unnecessary and unjustifiable drop in the cotton market, have served to slow things up quite a bit and at the present moment business in most of our lines is dull. So it looks, unless

conditions radically change, as if pleasant memories is all that we will have to go upon for the next few months.

"But underlying conditions are not bad. The country is prosperous and those of us whose optimism is strong enough will probably find justification this fall.

"It is yet too early to have any definite idea as to what the cotton crop will be; that depends too much on the weather, the boll weevil and the vagaries of government experts. But with all due deference to those governmental vagaries there will be no carry-over and if one is inclined to do a bit of long range guessing it would appear as if cotton ought to be getting mighty scarce by the spring of 1924.

"Personally, I am in hopes that there will be a short crop and that prices will be high; and I am hoping that the farmer will get his share of the high price. Something is needed, and I think it is just that—a fair return, a decent living, a reasonable profit, to stem this increasing tide of emigration away from the farm. If anything can be done to make life on the farm more attractive and more remunerative, it ought to be done. This is the biggest problem that faces the coming generation, not only with reference to cotton but every other product of the soil.

"Referring back to my allusion to governmental activities as affecting the cotton market, we are in an era of governmental interferences. There is too much legislation and too much administrative and departmental interference with business. There is an old adage or saw 'don't bite the hand that's feeding you.' I think we ought to have about fifty million placards of that motto stricken off and place one over every desk of every clerk and employee in the government service—especially in the tax departmnt.

"And that brings us to taxes. I believe we are all reconciled to high taxes. We know that the costs of the war, interest on the bonds, bonuses and pensions to come, will be with us for the rest of our lives and probably for that of the next generation. All we can ask and all we do ask is that those taxes be equitably distributed and fairly administered.

"There was a great deal of talk towards the end of the last Congress about a tax on corporate surplus, and a rather mystifying practice sprang up among many of the larger corporations of declaring stock dividends. I say mystifying because nobody seems to know why it was done or could give a reason for it.

"I have some very definite ideas on both of these subjects—ideas, I say, not knowledge, for nobody, unless perhaps it is the Honorable Mr. Frear, has any knowledge of these things.

"First, there will be no tax on corporate surplus.

"Second, stock dividends won't get anybody anywhere.

"There will be no tax on corporate surplus because in spite of the governmental vagaries I have alluded to, I do not believe Congress is insane enough to ruin the country; there will be no tax on corporate surplus because a government owing twenty billions of dollars will not embark on a plan of suicide which will disable itself to pay that debt or the interest on that debt; there will be no tax on corporate surplus because in these times of prosperity with the American people living happily and peaceably employed at a living wage, a job and a good job for every man who wants one—Congress is too sane to throw a monkey wrench into the works that will jam the wheels of industry, throttle investment, and bring on such a panic as this country has never known.

"Now when I say there will be no tax on corporate surplus I am not referring to the profits that may hereafter be reserved out of earnings and added to surplus account—I mean the surplus already accumulated, the surplus that represents our past savings, the thrift that everybody was preaching about during the war.

"There may possibly be a law that will make the future earnings of a corporation more heavily taxable if left invested in the business than if distributed out to be squandered. That would be a bad law, it would be a foolish law, but it would not be a confiscatory law and it would not be a direct tax on capital. There lies the difference. Your accumulated surplus is as much a part of your invested capital as your original stock issue, and the only difference is one of name and bookkeeping.

"With reference to stock dividends, I regard that pretty much as a fad or a fashion—pretty much as some styles of women's clothes. It won't get anybody anywhere because it distributes nothing. If anybody is liable to a tax because of undistributed earnings, declaring a stock dividend does not satisfy or discharge that liability.

BERNARD M. CONE, PRESIDENT-ELECT.

"Everybody who thinks a moment—and the average hard-headed American usually goes back of the form to the substance—will see at a glance that a stock dividend means nothing. If I went into the mill store with a hundred dollar bill and got the cashier to change it for ten ten-dollar bills, I would be no richer or poorer. It might focus the attention of the onlooker upon the fact that I possessed a hundred dollars, but my wealth would be neither greater nor less after than before the transaction. And in exactly the same way, if I am permitted to change one big share of stock in a corporation for ten little shares I have gained nothing.

"Changing the hundred-dollar bill into tens allowed me to spend part of it, to put it into circulation, to let somebody else get the benefit of it—and changing the big stock certificate into the little ones allowed me to do the exact

same thing. If the stock dividend represented earnings made by a corporation, the corporation had already paid a tax on them, perhaps 40, 65, 80 per cent on some of them.

"But I ought not to take up your time with platitudes of this kind. You all know these things—everybody knows them—only please somebody tell them to Mr. Frear. I think maybe he would be happier if he could once understand.

"There are a number of other things that might be mentioned, but there are other and more interesting speakers on the program and mine being a substitute address is not supposed to be good, anyhow."

Col. T. L. Kirkpatrick, of Charlotte, was the next speaker, and he too urged the manufacturers to get into politics and frame the laws passed to regulate their business.

Address of Mr. Williams.

The chairman next presented Nathan B. Williams, of Washington, D. C., who is associate counsel for the National Association of Manufacturers. Mr. Williams' address was interesting, and dealt mainly with the importance of manufacturing to the country's progress and prosperity. Discussing the governmental affairs of the country, Mr. Williams said that "we have a very singular situation as respects government. We are confronted by diverse and sundry authorities who, having gained their leisure through the accomplishments of the leaders of their nation, know no better than to try to regulate everything by law.

"About fifteen thousand new statutes are enacted in the United States every two years. The laws have become so numerous that no man can find out what they mean. There is no lawyer who can definitely advise you about them without weeks of careful study. During the 67th Congress, which closed last March, more than 20,000 bills were presented and some 600 new laws were enacted. More than 100 proposals were submitted to amend the Constitution of the United States."

Pointing out that the impatient reformers in national legislative halls apparently never read history, and thus fail to avail themselves of previous experience and precedent that would eliminate unnecessary effort, Mr. Williams mentioned the effort made to establish a minimum wage law for women, which, he reminded, was fortunately declared unconstitutional by the supreme court. And yet, Mr. Williams pointed out, the minimum wage plan was tried out 6,500 years ago by Hammurabi, and proved a failure with him, and has failed in every instance in which it has been tried since. Price fixing proposals was another instance cited by the speaker as an idea promulgated without the knowledge of past experience, pointing out that this system was proven uneconomic years ago.

Instead of contributing constructive effort, Mr. Williams declared, "these impatient reformers, who have apparently never read history, who have little or no experience in Government or business, taking advantage of the added leisure and comfort developed by the agency of modern accomplishment, seek in sundry ways to lay the heavy death hand of inertia upon the citizen and attempt to say that if you will not proceed down the road we point out for you, you shall make no progress whatever."

Touching upon the importance of business, Mr. Williams declared that we are largely governed by phrases instead of facts. The prime need of the day is for facts and for courage to face the facts. "How many people know that of the total of all of the income of our whole people, approximately 68 per cent goes to labor, 8 per cent to land rents, 16 per cent to interest, and 8 per cent to profits in excess of a normal interest rate?

"How many people know that if all high salaries were reduced to $5,000 a year, that the increase which might thereby be paid to lower-paid workers would not amount to more than two per cent?

"How many people know that 34.9 per cent of all income and profit taxes collected in 1920 were paid by the manufacturing establishments of the country?

"How many people know that the net income of manufacturing corporations for 1920, after deducting taxes, was 4.12 per cent? That is of all manufacturing corporations in 1920, that had a net income. How many know that of all the corporations, only 58.1 per cent had a net income? Rich corporations! And yet there are men in the statehouses who ride into office by attacking the 'rich corporations.' How many people know that *manufacturing* corporations paid 58.14 per cent of all taxes collected from corporations?"

Directing his figures more specifically to North Carolina, Mr. Williams pointed out that in 1920 there were 345,595 corporations in the United States, 4,812 of which were located in North Carolina. Of the 345,595 total corporations, 203,233 reported a net income during that year. Of the 4,812 in North Carolina, 3,143 or 65.31 per cent reported a net income for the same period.

The total Federal taxes paid by the 3,143 corporations in North Carolina reporting net incomes was $23,970,252, about 1.5 per cent of the total. North Carolina corporations paid in Federal taxes during 1920 approximately 25 per cent of their net income, which is about on a par with the percentage of net income of all corporations in the country paid in Federal taxes.

Mr. Williams presented the following interesting comparative figures: In 1914 there were 5,507 manufacturing corporations in North Carolina; in 1919 there were 5,999. The average number of wage earners in the state in 1914 totaled 136,844, and in 1919 there were 157,659. Capital invested in 1914 was $253,841,808, and in 1919, $669,144,096. Salaries—that is, superintendents, managers, presidents, etc.—in 1914 were $10,244,232; in 1919 for this purpose was expended $23,774,333. The amount paid for wages in 1914 was $46,038,447, while in 1919 this had increased to $126,680,099. In 1914 the amount paid by the manufacturing corporations for rent and taxes was $14,088,823, while in 1919 the amount, for this purpose, was $122,929,995.

The cost of materials in 1914 was $169,941,971, and in 1919 it was $526,906,181. The value of products in 1914 was $289,411,987 and in 1919, $943,807,949, making the value added by manufacture in 1914, $119,470,016, and in 1919, $416,901,768.

It is to be observed from these statistics, Mr. Williams pointed out, that there was very little increase in the number of establishments, or the average number of wage earners during this five-year period. The item of capital, however, shows an expansion of 2½ times, and to an increase of

(*Continued on page* 766.)

What the Southern Mills are Doing

A contract to construct the first unit of a chain of textile mills for North Texas was awarded at Dallas, Texas, on May 16. The first unit, which will cost about $1,000,000, is to be completed and ready for installing machinery by October 15. It is located in the Love Field industrial district and is about five miles north of the business district of Dallas on the Denton branch of the M. K. & T. railway. The tract of land on which the first mill will be located has about 200 acres available for industrial site and will be used partly for an industrial village for the employees of the mill. A model mill village will be a part of the construction of the first unit, and, while not included in the present contract, it is expected that the village will be ready by the time the mill is completed.

The mill is constructed and will be operated by what will be known as the Cannon-Robert interests. One of the largest stockholders in the new organization being M. L. Cannon, owner of the Cannon mills in North Carolina. Associated with Mr. Cannon will be L. W. Robert, Jr., member of the firm of L. W. Robert & Company, industrial engineers, of Atlanta, Ga., and several Dallas capitalists.

The first unit of the new plant will be a replica of the most modern mills of the Carolinas and when completed will be an example of up-to-date textile engineering from the standpoint of dividend earning. The building will be constructed of what is known as slow burning heavy mill construction. Attention has been paid to the light, heat and humidity control and about 65 per cent of the wall area will be steel sash and factory ribbed glass.

The main buildings are part two story and part one story. The heating plant, machine shops, warehouses and finishing plant are all one story high. Tight fitting, well ventilated monitors are used in the main mill, weave shed and finishing plant. The main walls are of brick and the structural parts of steel beams and trusses or of heavy yellow pine timbers. Concrete window sills and lintels and concrete trimmings will be used. Cast iron columns, maple floors, and a tar and gravel roof make up the various features of the general construction. The plant will set close to the ground and the first floor will be of concrete laid over a tarred foundation. The entire unit has been so planned and laid out that it can be doubled in size without disturbing the existing plant or lay-out. The main plant represents over one hundred and fifty thousand feet of floor space.

The textile machinery has been ordered and is expected to be delivered in time to be installed as the buildings are ready to receive it. Besides the textile machinery the plant is to have all such auxiliary equipment as heating, lighting, fire protection sprinklers, humidifiers, elevators, etc.

The plant will be electrically driven through using a combination unit and belt drive. Power will be delivered by the Texas Power and Light Company at 11,000 volts and transformed to 440 as the most adaptable for safe and economical use.

The mill village will be patterned after some of the more successful in use in the southeast and will be quite a step in advance of any now in use in Texas. Everything will be done in the way of accommodation and convenience to make a most attractive community for the operatives. The houses will be of bungalow type, equipped with gas, electric lights, water and sewage. The streets will be furnished with sidewalks, curbs and gutter, as well as street lights and shade trees. All of this will go to make up a most desirable place to live, especially with the quick access to Dallas over a good paved road and the electrification of the railway.

The houses of the mill village will be rented to the employees at a nominal cost, insuring them good homes close to the plant. For the convenience of the single operatives there will be a high-class boarding house for both men and women. There will also be provided special homes for the superintendent and various department heads. All that will go to make up a village that will attract and hold the very best class of cotton manufacturing operatives will be provided.

The Shaw Cotton Mills, Inc., Weldon, N. C., have been purchased by Paige, Schoolfield & Co., Inc. The mill has 10,000 spindles and is at present running on 40s and 50s yarn. J. A. Mandeville, general manager of the Mandeville Mills, Carrollton, Ga., will have supervision of the plant under the new ownership. The new owners will immediately build an addition and add new equipment in the form of twisters and winders.

Roseboro Cotton Mills, Roseboro, N. C., have been incorporated by T. I. Herring, A. J. Simmons and W. J. Butler, all of Roseboro, with a capitalization of $400,000. A mill will be erected, it is understood.

Organized recently with D. P. Rhodes as president and Paul Rhodes as secretary, the Rhodes-Rhyne Manufacturing Co., Lincolnton, N. C., have a site of 72 acres and will erect a cotton mill thereon.

The new 3,000-spindle yarn mill of the Southern Manufacturing Company at Granite Falls, N. C., has started operation, and it is understood that another large yarn mill will be erected within the next twelve months.

Contract for the construction of the announced addition to the Clara Manufacturing Company, Gastonia, N. C., has been let to Howard Clemmer, of Dallas, N. C.

Elm Grove Cotton Mills, Lincolnton, N. C., are adding three new winders to the present equipment.

Alexander Manufacturing Company, Forest City, N. C., are erecting 25 or 30 modern bungalows for the use of employees. The houses have four and five rooms and are equipped with electric lights, running water, baths and sewers.

Haynes Mill, Avondale, N. C., is constructing a finishing room 175 x 75, and will add 20,000 additional spindles.

The architectural department of J. E. Sirrine & Company has been selected to design the new high school building in the Parker School District of Greenville, S. C. This is the third largest school district in the state, being composed of twelve grammar schools in the mill districts. The new high school will be in the nature of an industrial school and will be centrally located with respect to the grammar schools. Heretofore the grammar schools have been under the management of the mills where they are located, but under the new scheme there will be unified supervision.

L. P. Hollis, former head of welfare work for the Victor-Monaghan group of mills, will be superintendent of the new school district.

Contract has been let by F. M. & J. H. Cunningham, architects, of Greenville, S. C., to the Gallivan Building Company, of Greenville, for the construction of a three-story mill, three warehouses and a boiler house for the Arcadia Cotton Mills, Spartanburg, S. C. The mill, which will be known as Mill No. 2, when completed will be three storis, 100 x 300 feet, and will house 30,000 spindles. The work is being supervised by Lockwood, Greene & Co., engineers, Charlotte, N. C.

Manetta Mills, blanket manufacturers, Lando, S. C., plan the installation of 24 new looms. They have just completed the installation of eight new spinning frames. Work has also begun on twelve new residences.

Work is progressing on the new $100,000 school building at the Monarch Mills, Union, S. C.

American Spinning Company, Greenville, S. C., has purchased 42 acres of land for $50,000 for future enlargements. This land adjoins the present plant and a portion of it will be used immediately for the erection of additional operatives' cottages.

Victoria Cotton Mill, Rock Hill, S. C., are to build a new plant for weaving, finishing and cloth storage, and will also add some carding and spinning to the present mill.

Fort Mill Manufacturing Co., Fort Mill, S. C., will add approximately 12,000 spindles and 350 looms to the present equipment, according to J. E. Sirrine & Company, Greenville, S. C., who are the engineers in charge.

The Royal Mills, Charleston, S. C., have been purchased by the Holt-Granite Puritan Mills Company, Burlington, N. C., of which S. L. Williamson is president. Extensive improvements will be made and there is a probability that colored goods will be manufactured.

Banning Cotton Mills, Banning, Ga., have added four 72-inch Crompton & Knowles looms to their tire fabric manufacturing equipment.

Palmetto Cotton Mills, Palmetto, Ga., are installing some new 42-inch Draper looms, increasing the weaving department to 122 narrow and 50 broad looms.

Contract for the concrete skeleton of the new Stark Mills, to be elected at Hogansville, Ga., has been let to A. J. Krebs Co., of Atlanta. This mill is to be erected adjoining the present plant of the Hogansville Division of the International Cotton Mills, and will have approximately 260,000 square feet of manufacturing floor space. From 100 to 125 houses for operatives will be built. Lockwood, Greene & Company are the engineers.

A107 x 180 foot addition will be constructed by the Kincaid Manufacturing Company, Griffin, Ga. Robert & Company, Atlanta, are the engineers.

Henry Cotton Mills, Hawkinsville, Ga., has completed a 40-foot addition to its main structure and is planning the installation of machinery for ratine manufacture therein.

Plans are under way for a considerable increase at the Roswell Manufacturing Company, Roswell, Ga. Shepard Bryan and William G. Bradfoot are interested.

Anniston Manufacturing Company, Anniston, Ala., will build a second and a third story to the present one-story building, and will rearrange machinery, adding new equipment in carding. J. E. Sirrine & Company are the engineers.

Dwight Manufacturing Company, Alabama City, Ala., has arranged with the city to build three school houses to accommodate 300 children.

Lincoln Mills of Alabama, Huntsville, Ala., are planning the erection of an additional mill to cost approximately $2,000,000, according to announcement. Additional lands for the new plant and village were acquired several months ago.

George H. Lanier, West Point, Ga., and associates, have purchased the Opelika Cotton Mills, at Opelika, Alabama, and will make enlargements and improvements, it is understood.

California Cotton Mills, Oakland, California, are considering the rebuilding of a portion of its plant, recently destroyed by fire.

The Augusta Factory, the Sibley Manufacturing Company, and the Enterprise Manufacturing Company entertained about six thousand of their employees with their families at a large barbecue given at the Augusta fairgrounds on May 26. A great crowd was assembled at ten o'clock, when the day's festivities were begun by community singing led by J. Edgar Probyn, of the Augusta Y. M. C. A. Then followed a series of athletic events until one o'clock, when dinner was served. The seating capacity of the dining hall was estimated at 3,500 and many tables were served three times. The committee in charge of the arrangements for the track meet included Miss Effie Brewer, director of West End playgrounds, general chairman; Don Culley, of the community service, chairman of the athletic committee; Ernest Hurt and Mrs. Kenner, representing the Augusta Factory; D. R. Senn, J. E. Brown and D. T. Long, of the Enterprise Manufacturing Company, and A. R. Gossett and Mrs. H. T. Stewart, of the Sibley Manufacturing Company.

The Art Cloth Mills of Gastonia, announcement of an enlargement of which was noted previously in these columns, has purchased 477 acres of land on the line of the Piedmont and Northern Railway near Lowell, N. C. The property is bounded on one side by the Catawba River and is crossed by the lines of the Southern Power Co., so that the new plant will have an abundant water and power supply. The mill, which is to be designed by J. E. Sirrine & Co., engineers, will cost in the neighborhood of a million dollars and will accommodate 1,000 looms with dyeing, bleaching, warping, winding and similar auxiliary equipment for the manufacture of fine and fancy combed yarn and silk mixed goods. The officers of the new mill will be R. L. Stowe, president; A. C. Lineberger, vice-president; W. T. Love, vice-president, and E. T. Switzer, secretary and treasurer.

Bringing the capitalization of the company nearer to the actual physical valuation of the property, the stockholders of the Trenton Cotton Mills, Gastonia, N. C., at a special meeting declared a stock dividend of fifty per cent on the capital of $187,200, bringing it up to $280,000. Application was also filed for an authorized capitalization of $500,000.

The Trenton Mills were erected in 1894 and have proven among the most prosperous of the Gastonia industries. The plant has been frequently enlarged and improved from the earnings. Officers include J. K. Dixon, president and treas-

Barrett Specification Roofs

Bonded for 20 and 10 Years

The Wearing Surface— Essential to Right Roof Construction

AS you probably know, the original Barrett Specification for flat roof construction — drawn up with the cooperation of leading architects, construction engineers and contractors — called for a wearing surface of slag or gravel.

Since that day inspection of tens of thousands of roofs of all types and the experience of thousands of owners, architects, building engineers and contractors have definitely established the value and *need* of such a wearing surface—have definitely established these facts:

1. That a wearing surface of slag or gravel, interposing an armor-plate of fireproof rock between the building and flying embers, is an all-important factor in fire protection. (The National Board of Fire Underwriters give Barrett Specification Roofs the base rating.)

2. That the slag or gravel which holds in place the heavy, *poured* (not mopped) top coat of Specification Pitch, makes it possible to use more than twice the amount of waterproofing material that is practical where no wearing surface is laid. This fact holds good regardless of the type of bituminous material employed. And, as you know, it is the amount of waterproofing material that goes into a built-up roof that largely determines its life and service.

3. This wearing surface protects against surface wear—defies the scuffing of heavily shod workmen. The firmly imbedded gravel or slag is proof against erosion or washing away.

Barrett Specification Roofs are bonded against roof repair expense—Type "AA" for 20 years, Type "A" for 10 years.

Copies of The Barrett Specification sent free on request

The Barrett Company

40 Rector Street, New York City

THE BARRETT COMPANY, LIMITED
2021 St. Hubert Street, Montreal, Quebec, Canada

urer; L. L. Jenkins, of Washington, D. C., vice-president; A. M. Dixon, general superintendent and assistant treasurer, and Kay Dixon, secretary.

The United States Finishing Company, one of the larger finishers of the country, with plants located at several New England points, has selected Cedartown, Ga., for the location of its first southern plant. Charles Adamson, president of the Cedartown Cotton and Export Company, was instrumental in bringing the opportunities of Cedartown to the attention of this company. The old Josephine and Wahneta Mills properties will be used and work on the new plant is expected to begin within sixty days.

Millis Cotton Mills, High Point, N. C., has been incorporated for $300,000 and will be equipped with 10,000 spindles to manufacture hosiery yarns.

The New England Mill Situation.

Cotton mills and finishing plants have begun to curtail production owing to the lack of profitable business and the unwillingness of managers to pile up stocks at high costs. It has been announced by the Amoskeag Company that its mills will be closed from June 29 till July 16, and the Pacific and several other large northern New England mill plants will close Fourth of July week. In addition, about a third of the production has been cut off in Fall River and about one-quarter in the New Bedford mills.

In Rhode Island, some of the B. B. & R. Knight mills are being shut down alternate weeks. Finishing plants have been running light, in some instances not more than 60 per cent of average capacity. It is now expected that the policy of curtailment will become very general throughout this section when the mid-year holiday is reached.

The prolonged dull business in cloths has given rise to a stronger belief among manufacturers that the consuming public is not taking the higher priced goods that have come along through the continued high cost of cotton and the recent advances in labor costs. The latter appears to have been the last straw as mills have been unable at any time since the advances went into effect to sell goods freely at prices warranted by the higher costs. This has been notably true of wide sheetings, the price having been advanced to a basis of 72 cents for 10-4 goods, from 65 cents, and business at the higher level having been made almost impossible.

The late spring and cool weather have worked against all sheer and dress cotton fabrics, and distribution has been hampered. This was shown by the widely advertised clearance sales of jobbers in many places, and by the very low business with converters.

Whenever there has been a sustained spell of hot weather business in retail channels has been much better in all fabric lines desirable for summer wear. Yet it has been noticed that silks have been cut up very freely and are priced attractively in relation to the high prices fine dress cottons must bring.

In the second week in June there was a quickening in the demand for goods that reached through to mill agencies. But the business was done chiefly on spot and nearby goods as prices had sagged to low levels and mills would not enter contracts showing a loss.

During the month new lines of fine dress ginghams were shown by Amory, Browne & Co., for the Boston Mfg. Co., Parkhill Mill of Fitchburg, and the Lancaster Mills, all large producers of fine colored cloths. No prices were named, and none will be suggested until September at least. It is guaranteed that prices will be no higher than last season. The new offerings have caused a great deal of comment on account of the high styling of the whole lines, and the prominence given to the many fine yarn cloths. Some of the goods have been completely newly styled without regard to what European designs or previous designs have been.

This move in ginghams was forecast in the styled offerings made by this house last season when the fall lines were shown. It was followed in a limited way by other gingham houses. It is regarded as the forerunner of a decided expansion in re-styling of yarn dyed cloths to meet the ever-increasing call for new things in the markets. The season has been a poor one for ginghams in nearly all parts of the country. Some men have said it was due to weather. Others have concluded that price has had much to do with the change, while still others are convinced that the ginghams must be as attractively made up as the fine and fancy cottons or the lower priced silks.

Trade in print cloths has begun to pick up, but for ten weeks Fall River reported sales amounting to less than a day's output each week. Most of the business done was in odd thin constructions and not in the regular makes. As Fall River mills did not make long contracts when the demand for print cloths was active, but preferred to sell only 60 days ahead, the falling off in demand soon caught them without orders. Moreover, in that center, costs of production have come to be abnormally higher, largely as a result of short hour legislation and heavy municipal taxation. Relief from legislation of a radical character is probable as public sentiment is crystallizing against further attempts to cripple industries.

The matter of high municipal taxation is being fought through the courts at great expense to taxpayers as well as to mills. Facts are being brought out that show to what an extent the mills have been unfairly treated, and stockholders, as well as the general public, are gradually beginning to see that some end must come to further oppression of the mills, or the industry will go out of the state.

There has been a revival of discussion in Fall River and New Bedford, of attempts being made to bring about consolidations in the management of various plants. Denials that anything more than talk is going on have been issued by some of the mill managers, but in spite of them, it is known that some of the interests in those cities have interested New York bankers in the probability of successful consolidations of some of the mills, and capital will be supplied whenever consolidation can be brought about without the watering of values. The savings that may come through consolidation will not be so much in a reduction of production costs as in the elimination of inter-mill competition for business through brokers, whereby the greater share of profits go to the distributor without giving the consumer any special advantage.

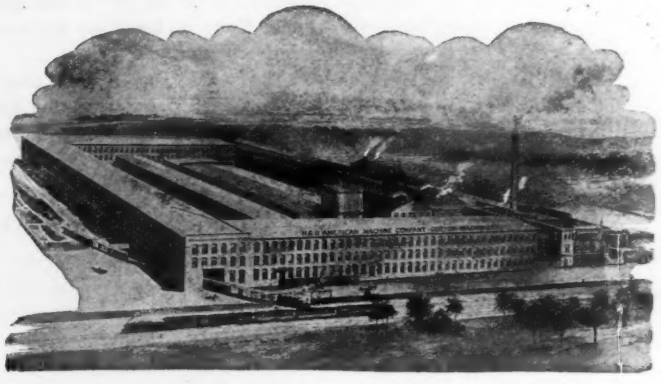
The success of any scheme to bring about a consolidation of these properties is problematical. The ownership is vested in many stockholders, and family interests are much intertwined with the management. Local pride can easily

H & B AMERICAN MACHINE CO.

PAWTUCKET, R. I.

COTTON MACHINERY

Crighton Openers
Buckley Openers
Roving Waste Openers
Hopper Bale Openers
Feeders
Self-Feeding Openers
Breaker, Intermediate
and Finisher Lappers
Revolving Flat Cards



Drawing Frames
Slubbing Frames
Intermediate Frames
Roving Frames
Spinning Frames
and Twisters
Spindles and Flyers
Spinning Rings
Fluted Rollers

Southern Office:
814-815 Atlanta Trust Co. Building
ATLANTA, GEORGIA

be stirred up against any suggestion of "foreign" ownership or management, and it becomes difficult to bring about mergers of properties on any economical basis. Such a thing as an outright purchase of the stocks in open markets is considered to be impossible.

Despite all that has been said and written of the decay of Fall River and other New England centers of manufacturing, the fact stands out that there are some of the most prosperous concerns in the business located there. The American Printing Company of Fall River, the Sagamore and Union mills, the King Philip mills, and several others, have gone on making money steadily and distributing handsome returns to stockholders. Moreover, the capitalization of Fall River mills is very low indeed, especially when measured by costs of replacement today. It seems probable from all that can be learned at this time, that talk of combinations of mills will continue and that eventually some of the weaker managements will be eliminated, and the plants merged with others.

Lack of new business at prices in any way attractive led to a policy of curtailment in the narrow looms of the Pepperell Mfg. Co., and this has special interest from the fact that this company has been known to pile up thousands of bales of standard Pepperell drills when manufacturing conditions were satisfactory. As the market for those products was in China and India, countries of low purchasing power, little risk was assumed in piling up stocks from 10-cent cotton. Conditions today, including very high mill labor cost as well as high cotton, make the storing of unsold manufacturing products a needless risk. The wide sheetings of the company are well sold ahead.

Combed yarn mills in New England have not been operating satisfactorily for a long time. The offering of combed yarns from the South has been one factor, while another has been the cutting out of combed yarn products in the tire fabric trade. During the early days of tire fabric manufacture New England combed yarn equipment was greatly expanded. The demand of late has been for yarns made of shorter staple cotton than many of these fine yarn mills specialized on and the competition for the business has been unprofitable. Some of the mills making specialties for regular customers are going on as usual doing a fairly profitable business.

The slow movement of highly styled printed goods in the wash fabrics markets has led to a slackening of the output of many of the printing and finishing plants. A great volume of highly colored and smartly styled goods was sent into the markets this spring and it is only within a few weeks that they have begun to appear in popular dress wear. Until this congestion of styled goods is out of the way it is going to be difficult for designers and mills to plan for another spring season. Some of the New Bedford and other fine goods mills have been booking orders on yarn dyed fine cloths, shirtings, and some silk and cottons. But the advance business has been dwindling and only very recently began to give promise of activity.

Most of the machinery plants are very busy on orders from southern mills. Little or no new business, except for repairs or replacement, has come out of New England. In some lines new deliveries cannot be undertaken this year. Owing to the high cost of labor and the difficulty of getting desirable building labor, some enterprises are being de-

layed but at present the shops have all they can attend to.

Cotton Comment.

BY H. AND B. BEER.

New Orleans, June 18th, 1923.

The growing crop has not made the progress expected to assure an adequate supply of raw cotton for next season's requirements. As a result values are somewhat higher than one month ago.

As is generally known, returns to the Government, as of May 25th, averaged the condition of the crop at only 71 vs. 69.6 last year and the 10-year normal of 73.6, which, according to private deductions, pointed to a yield of only about 11,400,000 bales, whereas the trade will likely need 12,500,000 bales, perhaps 13,000,000 for next season.

During the two weeks following May 25th the weather inland was generally unfavorable outside of Texas, especially in Oklahoma, Arkansas, Mississippi, Alabama and Georgia where there was a continuance of too much rain, resulting in floods in Oklahoma and Arkansas.

In consequence, private returns for the first half of the present period indicate an average deterioration in the plant of 2.9 points, at a time when improvement is generally the rule, which, according to private deductions points to a production of only about 11,000,000 bales. This is a very unfavorable showing, making it imperative for better weather to prevail in the interior if the crop is to make favorable progress.

During the past week, the third week of the current period, climatic conditions have been much better, and some headway is noted in the tenor of crop accounts, but a few days of good weather will not alter the unfavorable crop outlook very much, as it will take two or three weeks of good weather to enable the crop to make the necessary progress.

Texas, the important state, is reported in good shape; crop clean and well cultivated, but the state covers such a large area that unfavorable developments are likely to occur in one section or another. At the moment rain is said to be wanted in southern and western Texas, and the period for excessively high temperatures is near at hand.

Unless climatic conditions remain favorable until June 25th, the July 2nd Government crop condition report will hardly show much change from last month's 71, whereas it will compare with the 10-year average for June 5th of 76 vs. 73.6 for May 25th.

Returns to the Giles Bureau, as of average date June 9th, are to effect that cultivation over the belt ranges from poor to only fair, that a greater number of weevil are present than last year on corresponding date, that labor remains scarce, and that numerous tenants are abandoning crops in Georgia and South Carolina.

There is a rumor to the effect that Manchester (England) mills, using American cotton, are likely to shut down completely during July, and while we do not place much credence in the rumor, British spinners will have to be put on short rations owing to the small stock at Liverpool, including afloat, 236,000 bales vs. 653,000 last year, as it will not be until the latter part of September or early October when it will be possible for the English market to obtain new crop cotton in quantity.

Meanwhile consumption of raw cotton in the United States continues heavy for the month of May, including linters, 675,000 bales vs. 548,000 last year, making a total for the first 10 months of the season of 6,204,000 bales against 5,468,000 last season.

There is still time to make a large crop if good weather prevails during the remainder of the season, providing weevil are not very destructive, but if unfavorable weather prevails, or if the weevil are destructive, the production would likely be less than consumption for the third consecutive season.

The world needs a large crop for next season, as the carryover for American cotton by the world on July 31st promises to be only about 2,750,000 bales against 4,904,000 last year and 9,364,000 year before last.

Increased Power Service in Alabama.

Immediate expansion of the textile industry in Alabama's piedmont section is forecast with the announcement of the Alabama Power Company, headquarters at Birmingham, that a $10,000,000 hydro-electric power dam will be erected at Cherokee Bluffs on the Tallapoosa River. Next to the Wilson Dam at Muscle Shoals, the new dam will be the largest in capacity and size in the South and will add 132,000 horsepower, placing the Alabama Power Company in the front rank of southern power producing companies with a total capacity in excess of a half million horsepower.

The dam is to be situated in the center of the cotton mill industry of Alabama. Cotton mills in this section have been awaiting the announcement to enlarge their plants, it is reported, while several of the larger mills in the East are known to have been considering removal to this area as soon as the construction of the dam with this additional hydro power was assured.

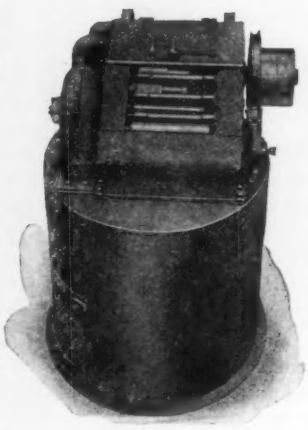
The dam will require two and one-half years to build. It will be 120 feet high, 800 feet long, and will contain 200,000 cubic yards of concrete. The reservoir, impounded by the dam, will cover 22,500 acres and hold 25,000,000,000 cubic feet of water.

The new dam will not only make available a large additional volume of power and improve service throughout the Alabama Power Company's system, but will permit of the regulation of flood waters to such an extent that floods will be greatly reduced in the Tallapoosa River and in the upper reaches of the Alabama River, safeguarding from overflows one of the richest agricultural sections of the state. 28 miles of the Tallapoosa will be made navigable and a four and one-half foot navigation stage on the Alabama up to Montgomery will be made possible throughout the year by increasing its minimum flow. On account of this relation to navigation, the Federal Government has assumed jurisdiction of the development.

"We are pleased to make this announcement just at this time," said Mr. Martin, of the Alabama Power Company, "when other power companies in some sections of the South are suspending developments. Before the Cherokee Bluffs development can be completed the power demands upon our system will be so much larger than can be supplied from our present hydro and steam plants, that it will be necessary to go forward with other developments which can be completed in much shorter time."

Roving Bobbins Cleaned Better, Faster—and More Cheaply

How many of your employees are needed to clean 36,000 roving bobbins in a single working day? 36,000 bobbins is a day's easy work for the Termaco Roving Bobbin Cleaner.



All bobbins 12 inches or less in overall length are stripped entirely clean of waste. The Termaco cards off the waste instead of cutting it off, leaving each bobbin unsplintered and looking like new. The Termaco ***gets the waste but leaves the bobbin.***

Only one operator is required to operate the Termaco. The machine is simplicity itself, to run and keep in perfect operating condition—anyone, who can drop letters into a letter-box, can feed bobbins to the Termaco.

There are no exposed gears or other parts that might catch the clothing or cause other injury. The Termaco is thoroughly "fool-proof."

The Termaco is built to give years of satisfactory, hard-working service. Parts, subject to wear or strain, are made of heat treated steel. All high speed shafting is ball bearing. Every gear is a cutgear. Every part is made in jigs and templates to afford rapid and perfect interchangeability.

The purchase of a Termaco is an investment that soon pays for itself in better, faster and *cheape* bobbin cleaning.

We believe our Engineering Department can give you information that will be valuable for you to have. Without obligating yourself in any way, ask us to send you this information. Before the matter escapes your attention, write us now, *please.*

TERMACO

Every machine trademarked TERMACO is sold under a binding guarantee as to workmanship, material and operation.

THE TERRELL MACHINE COMPANY, INC.
Engineering Department, Charlotte, N. C.
(General Supply Co., Danielson, Conn., Representative for N. Y. & N. E.)

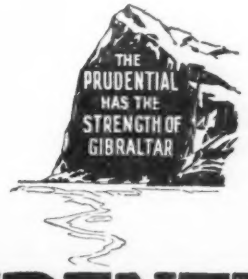
GROUP LIFE INSURANCE

What it is:

Life Insurance that covers under one policy, and at low cost, all the employees of an individual, a firm or corporation without regard to age and without medical examination.

What it does:

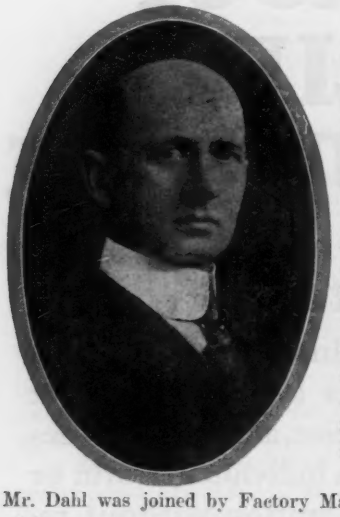
It enables the employer to protect *every* employee. It establishes a community of interest. It increases mutual respect and good will.



The
PRUDENTIAL
INSURANCE COMPANY OF AMERICA

EDWARD D. DUFFIELD
President
HOME OFFICE: NEWARK
New Jersey

Notes About Men You Know.



H. J. ("JACK") DAHL has been placed in charge of the mill white and cement coating divisions of Wadsworth, Howland & Company, Inc., 141 Federal Street, Boston, Mass., and is now traveling in the southern section. A. M. MacMurray, formerly advertising manager, is now manager of industrial sales, and W. A. Bodfish has been made advertising manager.

While in Atlanta Mr. Dahl was joined by Factory Manager George Felton, of the same company, who was returning from a trip to Cuba and the Canal Zone.

V. A. HOWARD has been made superintendent of the Superior Yarn Mills, East Monbo, N. C., which is under the general superintendency of R. H. Kale.

A. H. HAMILTON has resigned as assistant superintendent of the Lizzie plant of the Eastern Manufacturing Company, Salem, N. C., to become superintendent of the Ivanhoe Mill No. 2, Smithfield, N. C.

W. F. PRITCHARD has succeeded E. E. Pickard as superintendent of the Magnolia Silk Mill, Chattanooga, Tenn.

C. E. TUCKER, superintendent of the National Yarn Mill, Belmont, N. C., has been elected mayor of that city.

R. W. PORTER has succeeded Geo. O. Johnson as superintendent of the American Hosiery Mills, Kernersville, N. C.

L. E. BROOKINGS has become superintendent of the Helena Cotton Mills, West Helena, Ark.

T. H. MOORE, who has been superintendent of the Aponaug Mfg. Co., at Koscuisko, Miss., for the past ten years, has been promoted to general superintendent of all the mills controlled by J. W. Sanders, including two mills at Natchez, Miss., one at Koscuisko, one at Starkville, one at Yazoo City, one at Montgomery, Ala., one at Mobile, Ala., and one at Winona, Miss.

W. H. MOSHEIM has succeeded J. W. Jolly as superintendent of the Autauga Cotton Mills, Prattville, Ala.

W. J. STILL, recently resigned as overseer of carding, Mill No. 1, Lancaster (S. C.) Cotton Mills, to accept a similar position at the Kershaw (S. C.) Cotton Mills.

J. W. STARNES has been made assistant superintendent at the Spencer Mills, Spindale, N. C. He was formerly overseer of spinning at the Cleghorn Mills, Rutherfordton, N. C.

B. P. ADAMS has been promoted to overseer of No. 1 carding at the Lancaster Cotton Mills, Lancaster, S. C.

W. M. MELTON has been made overseer of spinning at the Cleghorn Mills, Rutherfordton, N. C.

H. H. STEWART, JR., is superintendent of the new Kilby Cotton Mills, Montgomery, Ala.

GEORGE R. QUIMBY has been made overseer of carding at the new warp mill of the Farr Alpaca Company, Holyoke, Mass.

HORACE PARKER has been promoted to succeed George R. Quimby as overseer of carding at the Boston Duck Company, Bondsville, Mass.

H. L. REED, formerly night superintendent of the Wellman Cotton Mill Co., has been promoted to assistant superintendent of the plant. T. A. Hopwood has been promoted from second hand on the day run to card room foreman at night.

S. M. WYLIE has resigned as overseer of weaving at the Chadwick-Hoskins Mill No. 1, Charlotte, N. C., and accepted a similar position at the Fort Mill (S. C.) Manufacturing Company.

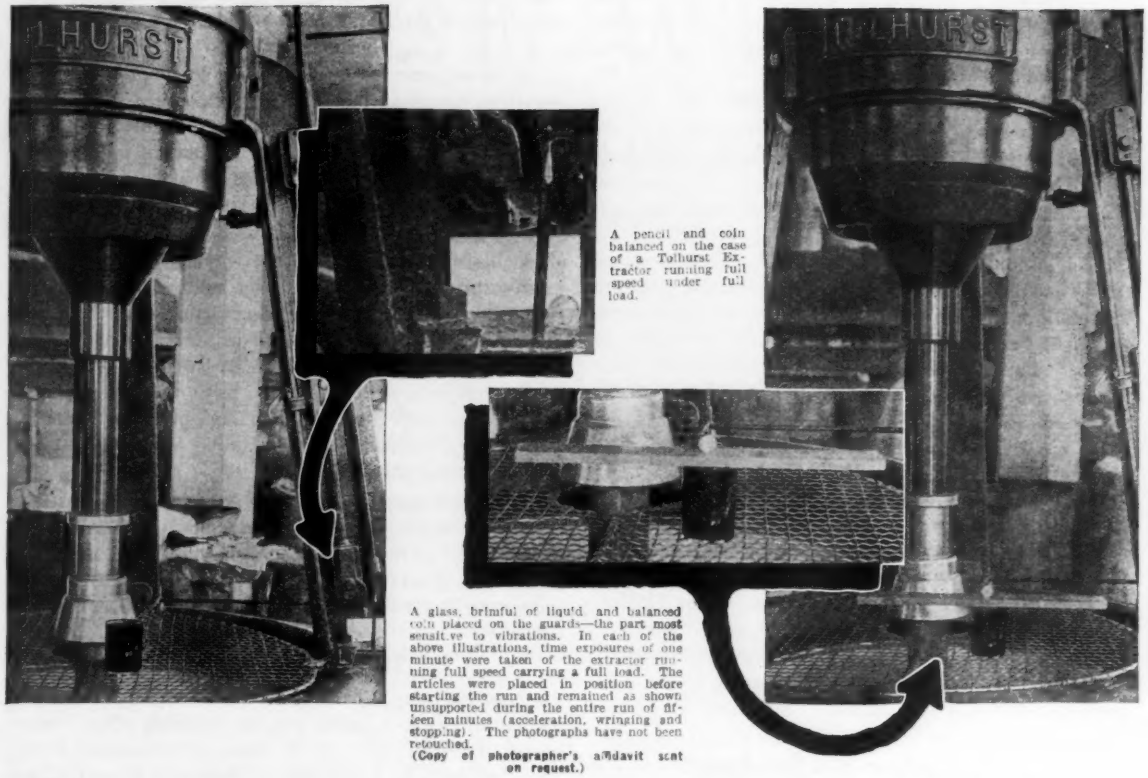
M. S. MULL, formerly at the Loray Plant of the Jenckes Spinning Company, Gastonia, N. C., has gone to Charlotte as overseer of weaving of Chadwick-Hoskins Mill No. 1.

HUGH BLACK, formerly of the Hudson Cotton Goods Company of Greenville, S. C., and a graduate of the University of North Carolina, has become associated with the Detroit Graphite Company and will represent them in the eastern part of North Carolina and Virginia. He will make headquarters at Greensboro, N. C. However, H. M. Perry will continue to travel western North Carolina and as far east as Greensboro.

HIBBARD S. BUSBY, who has been located at Manchester, Conn., as research colorist, has opened offices at 101 Park Avenue, New York City, Room 518, as consulting colorist, where he is prepared to serve the needs of the textile industry.

JOHN A. MITCHELL, SR., who organized the Mitchell Hosiery Mills of Columbus, Ga., and who was formerly president of the Hamburger Cotton Mills, now the Bradley Manufacturing Co., died at his home in Columbus on June 13th after a long illness. He was a well known and successful manufacturer, a member of the Kiwanis Club, active in the affairs of the First Baptist church, and a charter member of the Columbus Elks Club. Mr. Mitchell is survived by his wife, formerly Miss Annie Hamburger, of Columbus, and two sons, John A. Mitchell, Jr., and Louis H. Mitchell; also two brothers, Col. R. A. Mitchell, of the Alabama Power Company of Birmingham, Ala., and S. Z. Mitchell, of the Electric Bond and Share Company of New York City.

W. S. FREEMAN, who for the past several years has been connected with the Samoset Cotton Mills of Talladega, Ala., as vice-president and general manager, has resigned this position to go to a larger position at Opelika, Ala., as secretary and general manager at the Opelika Manufacturing Company, formerly the Opelika Cotton Mills, which was recently purchased by a group of West Point, Ga., manufacturers headed by George H. Lanier. Mr. Freeman has built himself an enviable reputation as a successful manufacturer by his management of the Samoset plant, and has



A pencil and coin balanced on the case of a Tolhurst Extractor running full speed under full load.

A glass, brimful of liquid, and balanced coin placed on the guards—the part most sensitive to vibrations. In each of the above illustrations, time exposures of one minute were taken of the extractor running full speed carrying a full load. The articles were placed in position before starting the run and remained as shown unsupported during the entire run of fifteen minutes (acceleration, wringing and stopping). The photographs have not been retouched.
(Copy of photographer's affidavit sent on request.)

These Tests Are Not Mere Tricks— They Mean *"MONEY SAVED"* For You!

The tests shown above prove the absence of vibration—they prove the elimination of that destructive force which ruins the machine and the building itself and also lowers production efficiency.

TOLHURST
REG. U.S. PAT. OFFICE
EXTRACTORS
TOLHURST MACHINE WORKS ESTABLISHED 1852, TROY, N.Y.

cannot vibrate because the oscillating spindle equalizes unevenness of load and finds its own "weight center."

Whether it be the drying of a sample of gossamer fabric, or of a 700-pound paper maker's felt, a TOLHURST is the quickest, most efficient, quietest and most economical machine to use. There is a type and size of TOLHURST Extractor for every industry and purpose.

Write, stating your problems, and full information will be sent without obligation

TOLHURST MACHINE WORKS, TROY, N. Y.

New York Office, 111 Broadway

Western Representative	Southern Representative	San Francisco Representative	Canadian Representative
John S. Gage, 8 So. Dearborn St., Chicago, Ill.	Fred H. White, Realty Bldg., Charlotte, N. C.	B. M. Pilhashy, Merchants Exchange Bldg., San Francisco, Cal.	W. J. Westaway Co., Westaway Bldg., Hamilton, Ont. 400 McGill Bldg., Montreal, P. Q.

also found time to be active in the civic and social life of Talladega where he is a member of the city board of education, president of the Talladega Country Club, past-president of the Talladega Rotary Club, and vestryman of St. Peter's Episcopal church.

J. G. CHAPMAN, who has been superintendent of the Samoset Cotton Mills at Talladega, Ala., has been made general manager of the plant, succeeding, in this position, W. S. Freeman. W. C. Lanier, of West Point, has been made vice-president.

The Pastorfield Company, Richmond, Virginia, manufacturers of industrial paints, have appointed the Southern Textile Specialty Company of Greenville, S. C., as representatives for their products.

M. S. BRANTLEY has been promoted from second hand to overseer of spinning at the Everett Mills, Monroe, N. C., succeeding W. L. Helms, resigned.

S. W. MCLAIN has been made overseer of carding and spinning at the Appalachian Mills, Knoxville, Tenn.

P. E. ADAMS has accepted the position of night carder and spinner at Mooresville Cotton Mills, Mooresville, N. C.

H. T. HALMAN has been appointed superintendent of the Bowen-Crews Company, Athens, Ga.

J. E. BEST has become superintendent of the Childrey Hosiery Mills, Haw River, N. C.

D. E. PHILLIPS has resigned as assistant overseer at Sylacauga, Ala., to become overseer of spinning at the Gambrill Mills, Bessemer City, N. C.

North Carolina Mill Men Meet.

(*Continued from page 756.*)

about 100 per cent in salaries is to be added an increase of nearly 200 per cent in wages.

Another item which Mr. Williams said calls for close scrutiny is that of rent and taxes. Of the 123 million dollars paid out under this heading in 1919, only ½ of 1 per cent went for rent; the balance was for taxes. In other words, the amount paid out in taxes in 1919 was more than eight times the amount paid out for taxes and rent in 1914. And the amount paid out under this head in 1919 is greater than the total value added by manufacture in 1914, and falls little short of equalling the cost of all materials in the latter year.

"The fundamental conception in the formation of our government was that the national government should never undertake anything which the states could do and that the states should never attempt to do anything which the individual could do," said Mr. Williams, "but we are rapidly drifting from this conception. The responsibility for developing the right kind of attitude in the public mind upon economic questions devolves upon the business men of the country. In just so far as they discharge that obligation will our industrial and social system survive the onslaughts which are being made upon it.

"There are constantly groups of people all over this country on soapbox corners and elsewhere who will challenge practically all of our accomplishments, and their loose and false ideas can only be met by the facts. And the responsibility is upon the business man to know the facts and give them. It is apparent that industry must make itself understood in order that it and civilization may survive. Where there is no industry there is no civilization, and where there is civilization there is industry."

Entertainment.

At the adjournment of the morning session, the members were transported to the Country Club, where a luncheon was served by the local entertainment committee. During the afternoon an Association golf tournament was staged, and at 4:30 the delegates witnessed a polo game at Reynolda.

On Friday evening a banquet was held in the ball room of the Robert E. Lee Hotel, convention headquarters, at which prizes won in the afternoon golf tournament were awarded. The first prize for manufacturers was won by J. C. Webb, of Hillsboro; second prize, even score, Allen Mebane, E. C. Barnhardt and E. C. Dwelle, T. B. Webb made lowest gross score, and Kemp Lewis won second prize. W. H. Wylie, of Charlotte, won first prize for visitors, Carson Rose, second prize, and Harold Van Zandt, third prize.

Governor Cameron Morrison, of North Carolina, was the speaker at the banquet. The governor spoke with reference to the League of Nations, characterizing it as the ideal compact for the world countries, and declaring that any plan to join the World Court alone was but a "back-door" proposition.

The Second Session.

convened Saturday morning and was the executive business meeting of the Association, and the following officers were elected: President, Bernard M. Cone, of Greensboro; First Vice-President, E. C. Dwelle, of Charlotte; Second Vice-President, S. F. Patterson, of Roanoke Rapids; Third Vice-President, Joe M. Gamewell, of Lexington. Hunter Marshall, Jr., Charlotte, was re-elected secretary and treasurer. Mr. Dwelle also becomes chairman of the executive committee, the members of which will be appointed later.

The reports of the secretary-treasurer and traffic manager and special committees were received.

It was proposed to discuss at this meeting the suggested changes made by the New Orleans Cotton Exchange for the Carolina Mill Rules of 1915. The Association, however, went on record as recommending no changes in the Rules of 1915 and of desiring these rules to remain in efect.

Resolutions were adopted favoring the establishment of textile machinery plants in the South; the locating of repair parts depots in this section, and other matters of interest.

The third annual Made-in-Carolinas Exposition will be held in Charlotte, N. C., from September 24 to October 6. The new exposition building, 100 x 300 feet, two stories, will be used. The purpose of the organization is the exploitation of Carolina products, and, as usual, textile manufacturers are expected to constitute a large percentage of the exhibitors.

Jordan Manufacturing Company, well known bobbin manufacturers with factories at Monticello, Ga., and Toecane, N. C., have just completed a new bobbin plant at Dublin, Ga., which will be used to supply "blanks" for the other factories until such time as a complete equipment is installed for producing the finished product.

INTANGIBLES IN MANUFACTURING

A Series by

Frederick H. McDonald

Why to Place a Plant Where

A Study in Location

The location of a plant was one time a matter of little consequence. The principal investor put the mill up as near as he could to his own back door simply as a matter of personal convenience. It had only to supply a limited territory, and the number of other plants in the same line of manufacture trying to supply the same field was small.

Today, the mill has to sell to the whole world at prices in line with those of all the other similar mills in the world.

Competition, in other words, is keen.

Every factor that tends to make the cost of an article even a little bit higher than it need be is of vital importance in determining its position in regard to the day's accepted best sellers.

Such a factor is the proper location of a plant. Get it right, and there is a downstream course to follow. Get it partially right, and at worst there is only calm water to row against. Get it all wrong—and you are overboard trying to fight upstream against a regular freshet that never seems to lose its intensity.

How far do you haul your raw material? Could you have got nearer?

How far does your customer have to pay freight on your product? Can he buy the same thing nearer at hand?

Are you so far from your coal supply that you are buying freight—instead of fuel? How about water-power, or even purchased power?

Are you on the main line of more than one railroad, so that good service is always assured, or do you have to bear with the indifference of a single line with no local competitor? Perhaps you are even on a branch line with no regular service. In time of strike or railroad tie-up, are the adjacent highways over which you may do your hauling good enough for this purpose?

Is the kind of labor you want plentiful in this neighborhood, or will you have to import it at large expense? Are there so many other similar plants located thereabouts as to make the labor market a competitive one, with excessive wage scales and personal inefficiency? Do destructive labor laws put you at a disadvantage.

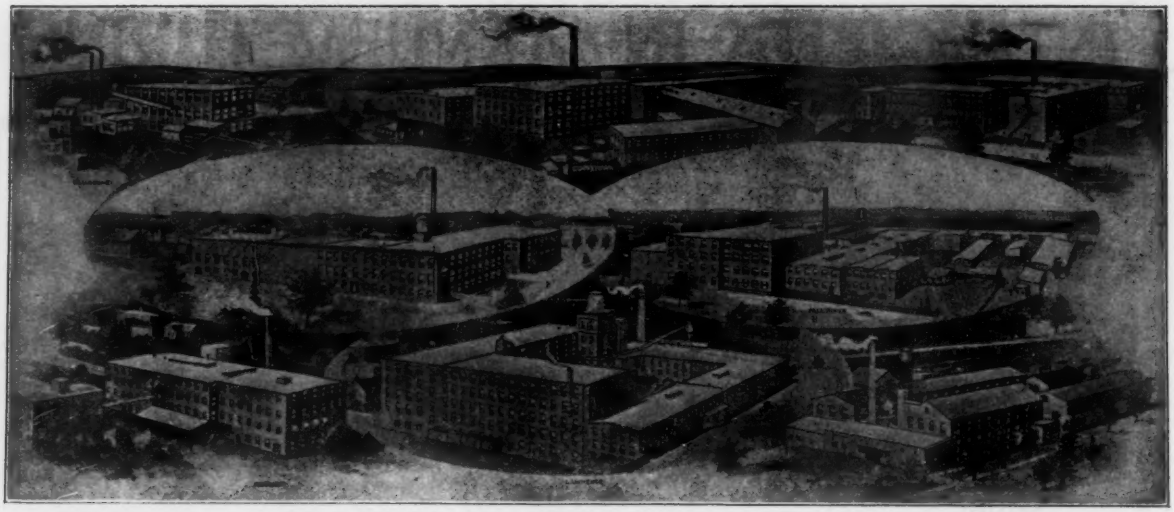
Are climatic conditions good or poor? Is the average winter temperature so low that heavy fuel bills and excessive thick clothing increases the cost of living—or is the average summer temperature and humidity so high as to vitiate your help, and make them sluggish in production?

Will you build outside of a city in an isolated community where a large housing investment is necessary, or will you be near enough to a large town for your help to live in homes already built? Will you have to build a school and maintain it, or can the children go to a public school? Churches, stores, hospitals, amusement facilities—will you have to provide them, or can you locate where they are already provided?

If you do locate where you can get all of the above desirables on the free list—is the old tax-gatherer going to collect such a slice of your profits as to make it cheaper to own the whole town?

These factors can seldom be made altogether favorable—but such a location can be found as will eliminate the most unfavorable ones—with the elimination of a constant source of serious bother and expense—

And with a big increase in profits!



Specialization in Eight Plants Assures Supreme Quality

Men with years of experience—men who know the needs of the textile industry have produced the U S Bobbin—a bobbin lighter, stronger and absolutely smooth and true. They have perfected a system of testing every bobbin on your own spindles, which eliminates any that do not run true.

Behind every U S B & S Co. product stands its enormous organization — EIGHT plants — its large staff of experts, which assure you utmost quality and entire satisfaction.

U S Roll quality is well known. Made especially for Universal and Foster Winders. Also Underclearer rolls, Plain and covered Comber Rolls, Drawing Rolls, etc.

The "Stetson" Hand-Threading Shuttle is another famous U S product—the best exponent of hand threading type of shuttle that has ever been put on a loom. U S Shuttles are made in every type, with Draper, Stafford and Crompton & Knowles Looms.

A trial order is all that is necessary to convince you of U S superiority.

BEAMS
- Cotton
- Rubber

BOBBINS

SHUTTLES

SKEWERS

SPOOLS
- Moquette
- Drawing
- Warper
- Twister
- Jack
- Silk
- Belting

SPEEDERS

WARP FILLING

CAP FILLING

FLAX SPINNING

TWISTERS

TRIPTODS

QUILLS

ROLLS
- Comber
- Underclearer
- Drawing
- Winder

ETC.

U S BOBBIN & SHUTTLE Co.

LARGEST BOBBIN and SHUTTLE MANUFACTURERS in the WORLD

Eight Factories

Providence R.I.

AN OLD TIMER SAYS

Success! What in the dickens is success, anyway?

To tell the truth, I don't believe there is one man out of ten who really has the right idea as to what success actually is.

Judging from the general conversation with my brother overseers and superintendents, I have come to the conclusion that most men think that success means the man who has made the most money or is drawing the largest salary. If one man of our acquaintance draws a salary of $15,000 per year and another man we know just as well makes $3,000, most of us will at once say the $15,000 man is the more successful.

And right there, my dear fellow, we are sadly mistaken.

From my own personal experience I know men in the $15,000 class who spend more than they make, who are always in debt and if for any reason they should get out of a job they would be dead broke.

I know other men in the $3,000 class who not only live within their incomes, but who save some of their money to carry "building and loan," carry some life insurance for the old lady and the kids and can have just as much fun driving the "tin lizzie" as Mr. Fifteen-Thousand-Dollar Man gets out of his Packard.

I'll tell you, gentlemen, most of us have got this word "success" down wrong.

One dictionary says that success means "a favorable or prosperous course of anything attempted." That means that if a man starts out as a shoe-black and blacks shoes better than the other fellows and proves he is a better bootblack than the others and manages to make a living and provide for those dependent upon him—he has already achieved success in his line.

There are some men who are just naturally not cut out for certain jobs, but that is no excuse for a man not achieving success in his particular line.

So don't get a grouch because you haven't got that $15,000 job, but *be successful* in the one you have and if you will apply yourself to that one thought you will finally prove that you are deserving of moving up a notch.

Accident may put a man in a responsible position, but *nothing but fitness can hold him there.*

Be a success in your room or with your mill, no matter how small it is, and you will enjoy life much more than the man who appears to be a success in his $15,000 job but in reality is a failure to himself.

An old gentleman walked out to the park to watch the young people skate. He noticed a little boy buckling on a new pair of skates and saw how proud he was of them—but just as soon as the boy jumped out on the floor his feet flew up and the back of his head was the first thing that hit the floor.

The old gentleman smiled as the boy looked all around to see who was looking at him. He rubbed the back of his head a little and got up to try it again.

Down he went again and again—until finally he got a pretty good start and it seemed like the skates had perpetual motion in them—he shot down the hall at about twenty miles an hour, but he couldn't stop when he came to the wall. The old gentleman went over and picked him up and by this time he was getting sorry for the boy because his last fall against the wall just about knocked the breath out of him. "Son," said the old man, "come over and sit on the bench with me and watch the others skate." The boy looked from the old man down to the pair of new skates, "Mister," he said, "I didn't get these new skates to quit with," and out he went again to get more hard knocks.

Gosh! If some overseers were only made out of that kind of stuff!

With all the money which has been spent by labor unions in employing high priced men to represent them and manage their affairs, they have never been very successful.

To my mind the one big reason for that is because they have always tried to do *less* than unorganized labor; they have had lower standards; they have stooped to unfair methods; they have tried to "bulldoze;" they have tried to drive everybody to their way of thinking when they thought they held the whip hand.

But when they find a leader who will be absolutely honest, who will teach his followers that they must have ***higher standards*** of work than non-union labor—then they can look forward to increasing and permanent success.

For goodness' sake, don't make promises you are not absolutely certain you can fill. But when you do make a promise to one of your operatives, fill it to the letter even if it takes money out of your own pocket to do it.

You may be conscientiously doing all you can to boost your job—but unless you are using all your influence, all your tact, all your judgment, to get others to boost with you, you are not accomplishing much.

Four big words: "You can be successful"—
Three, a darn sight bigger: "If you *will.*"

Overhead Expense

Don't Worry About it—*Control* it

Two simple accounting functions rightly and constantly performed will control Overhead Expense.

Preparation of the Expense Budget is the first step. The second is the definite fixing of responsibility for making the daily, weekly and monthly audits of actual expense.

No Expense Budget will control expense; for the Budget, however elaborate or carefully prepared, is only a guiding estimate. *Actual* expense must be frequently checked with the Budget. To give this checking intelligence and make it effective, detailed and actual expense information is necessary.

Totals of each expense account are not enough. A knowledge of the details of all items is necessary. Only thru such details may the one responsible for his department expense determine, at any time, what *is necessary* and what is *not*.

Reviewed in the light of the Budget, and considered by the one who knows as applicable to the running requirements of the business—such an up-to-date expense account *will control expense.*

The worry of Overhead Expense is due to lack of delegated supervision supported by simple system and definite, right accounting method.

ERNST & ERNST

AUDITS—SYSTEMS—TAX SERVICE

NEW YORK
PHILADELPHIA
BOSTON
PROVIDENCE
WASHINGTON

CHICAGO
MINNEAPOLIS
ST. PAUL
ST. LOUIS
KANSAS CITY

CLEVELAND
BUFFALO
PITTSBURGH
DETROIT
CINCINNATI
MILWAUKEE

INDIANAPOLIS
TOLEDO
ATLANTA
RICHMOND
BALTIMORE

NEW ORLEANS
DALLAS
FORT WORTH
HOUSTON
DENVER

THE SAME set of loom harness makes any cloth when you weave with

"DUPLEX" FLAT STEEL LOOM HARNESS

STEEL HEDDLE MFG. CO.

GREENVILLE PHILADELPHIA PROVIDENCE

Southern Office

509 Masonic Temple Greenville, S. C.

Hampton Smith, Southern Manager

N. B.—We are the sole manufacturers of nickel-plated drop wires for every kind of loom.

How Other Men Manage

Practical Discussions by Cotton's Readers on all varieties of Mill Subjects

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

What is the Best Possible Production on 50s Warp Yarn?

EDITOR COTTON:

The writer would be interested to know what the best possible production is on 50s warp yarn with the following conditions existing:

1⅛-inch carded stock.
1½-inch ring.
1-inch front roll.
No separators.
Warp wind.
6¾-inch traverse.

The yarn would go into print cloth construction. It would be interesting to learn from your readers what spindle speed and front roll speed can be obtained with a reasonable amount of loss in breakages at the frames and in later operations. The draft, weighting of rolls, weight of traveler, humidity, etc., are not mentioned and I would also like to know what the figures should be on these things to get the desired results on 50s. Would a little better staple cotton be advantageous on these numbers and to what extent would production hinge on the staple?

Another way to put it is that the writer is interested to know what is the maximum front roll speed that is being run among your readers on 50s warp yarn and what the accompanying conditions are. Contributor No. 55.

Lumpy Slubber Roving.

EDITOR COTTON:

"Y. T." has a devil of a hang-up on his lumpy slubber roving proposition. The question is incomplete, and is hard to get at to give an intelligent answer, as he must have an extraordinary style of frame to give a 1¼-inch front roll diameter; 1⅛-inch middle roll diameter, and a 1¼-inch back roll diameter. Then he says he has three weights on them, when usually the two back rolls are weighted with one weight, and the front roll with one separate weight—and weighted in the reverse to what he states.

But we will assume that he has them weighted as he indicates and that his diameters are as he gives them, and as listed in the preceding paragraph.

I have never run weights on drawing or roving frames with the lightest ones on the back rolls where the slivers are heaviest. It always occurred to me that a fellow needed the heaviest weights where the slivers are heaviest, so as to hold them intact, for as the cotton is drafted out it gets lighter and does not need so much weight on the rolls.

"Y. T." gives these as his weights—front roll, 18 pounds; middle roll, 14 pounds; back roll, 10 pounds. As I said, these are in reverse to my usual custom, and from what the brother says he is having trouble with something, and some of it at least must be in the arrangement of his weights. I don't care to experiment with it and make further tests to argue on the question, assuming that his other conditions are normal.

I really do not know how to start to answer this question, as he seems to involve both the drawing frames and slubbers in the question—not directly, but indirectly.

But to begin with, a part of his trouble is that his sliver is too heavy, especially for his weights. If it is the drawing frames that have the weights mentioned— 10, 14 and 18 pounds each—they are too light, and then with the 18-pound weights on the back roll and the 14-pound weight on the middle, and the 10-pound weight on the front roll, it would be more appropriately proportioned. I use, on a 60-grain sliver on the drawing a 14-pound weight on the front and second rolls, a 16-pound weight on the third roll, and an 18-pound weight on the back roll.

On the slubbers, I use a 20-pound weight on the front roll and a 22-pound on the second and back rolls, making a 64-hank roving, and find them very satisfactory.

His front roll setting to the middle roll—1⅝ inches—is too far. I would suggest a setting of 1⅛ inches or 1⅛ inches from centers of rolls. The middle and back rolls will be all right set at 1½ inches on centers, but I would prefer 1⅜ inches.

Regarding the thick and thin places being caused by wrapping the sliver around the tops of the flyers, or running it straight down without wrapping it around the top, I have never tried the latter practice as I have had quite a time, with learners, especially, to keep them from doing this and I have not made any test of it, but I can tell one running this way the length of two roving frames. It has a look about it that it is not being given the proper amount of twist, and appears to be slack twist, and if this be so, it is perfectly natural that it would cause thin places in being run off at the next machine, as it would be slack twist, and would stretch and cause thin places while unwinding.

I would be glad if "Y. T." would come back and give his hang-up more completely. When the readers see a

Safety For Stored Coal

All-Galvanized

Anchor Post Fence

will unfailingly protect that coal supply of yours. It's strong, unclimbable, impregnable.

Made of heavy chain link mesh—No. 6 wire. Supported on heavy steel U section posts that have no hidden unprotected surfaces where moisture can collect and rust form. *Drive-Anchorage* permanently maintains fence alignment, defying soil disturbances due to repeating frosts and thaws.

Every part **galvanized throughout** by the thorough, old-fashioned hot-dip-spelter method.

The nearest Anchor Post office or sales agent will gladly give you complete information on just the fence you need. Phone, write, or wire.

ANCHOR POST IRON WORKS

52 Church Street, New York, N. Y.

Boston, Mass. 79 Milk Street
Chicago, Illinois 8 So. Dearborn Street
Cincinnati, Ohio 141 East Fourth Street
Cleveland, Ohio Guardian Building
Detroit, Mich. Penobscot Bldg.
Hartford, Conn. 902 Main Street
Mineola, L. I., N. Y. 167 Jericho Turnpike
Philadelphia, Pa. Real Estate Trust Bldg.
Pittsburgh, Pa. 541 Wood Street
Rochester, N. Y. 48 Berry Street

Sales Agents in Other Cities 2474-G

FIRM—BECAUSE THEY ARE ANCHORED

Anchor Post Fences

PERMANENT—BECAUSE THEY ARE GALVANIZED

question they are interested in, they watch for answers, and if the question is not plainly put, it cannot be clearly answered, and we fail to get the best out of it. (This was done on page 704, June number.—Ed.)

Contributor No. 14.

EDITOR COTTON:

In reply to "Y. T. (Ala.)," who writes in the April number with regard to his trouble with slubbing roving having thick and thin places in it, I will suggest a few things which I think he ought to try.

In the first place, I think that his front and middle steel rolls are too far apart, if he means that they are 1⅛ inches from center to center, for 1-inch cotton. I think that he should set them as close as he can get them. He will then be 1⅛ inches from center to center. I think that the distance between the middle and back rolls is all right.

I believe that running the sliver straight down through the tube of the flyer is all wrong. It should be wrapped around the nose of the flyer and then put down through the tube of the flyer. I have never seen slubbers run by putting the sliver straight down through the tube, and never heard of it being done before.

I do not think that his trouble lies in the way in which his slubbers are weighted. I would suggest that he make a lighter drawing sliver if possible. I think that an 80-grain sliver is too heavy. Then again, the trouble may be in the drawing instead of the slubbers. The rolls may not be set right for such a heavy sliver. A good way to test drawing sliver is to take about a yard of sliver and put one end of it on the floor, put your foot on it and then twist the other end between the hands until it is well twisted, and then run the sliver between the thumb and forefinger. If it is lumpy you will soon find it out.

I hope that "Y. T." will find relief from his trouble in these suggestions.

K. C. (Conn.)

Gear Speeds.

EDITOR COTTON:

Replying to that part of "W. G. M.'s" inquiry which concerns gear speeds, the number of revolutions per minute will be inversely proportional to the number of teeth. The gear having the greater number of teeth will run as much slower than the other gear as its number of teeth is greater than the smaller number of teeth. The reason is that one tooth in one of the gears corresponds to one tooth in the other gear, hence if one had 49 teeth and the other 51 teeth the latter will make $49 \div 51 = 0.96$ of a revolution for each revolution of the former. And the one with the smaller number of teeth will make $51 \div 49 = 1.04$ revolutions for each revolution of the one having the larger number of teeth. The well known rules for finding gear speeds may be applied in such cases as "W. G. M." mentions. The rules are

$$\text{Revs. of driven} = \frac{\text{Revs. of driver} \times \text{teeth in driver}}{\text{Teeth in driven}}$$

$$\text{Revs. of driver} = \frac{\text{Revs. of driven} \times \text{teeth in driven}}{\text{Teeth in driver}}$$

The rules refer to the number of teeth without regard to the pitch. However, the pitch cannot be greatly different without causing bad contact and rapid wear, as well as considerable noise if the gears work under a heavy load and high speed or must be reversed frequently and quickly.

H. K. (Ga.)

EDITOR COTTON:

In reply to "W. G. M.'s" question in your May issue concerning gears of like diameters having different numbers of teeth.

Gears are usually figured from the pitch diameters. The number of teeth divided by the pitch diameter equals the pitch; that is, the number of teeth to one inch of pitch diameter. One divided by the pitch equals the addendum or the height from the pitch line to the top of the tooth. 1.57 divided by the pitch equals the thickness of the tooth on the pitch line. 2.157 divided by the pitch equals the whole depth of the tooth.

If this is not sufficient for "W. G. M." maybe I can explain it more fully if he would give me more information concerning his diameters and numbers of teeth.

It may be that he is using gears which have been cast from cast gears used as a pattern. This would make a material difference because cast iron shrinks approximately ⅛ of an inch to the foot.

H. W. (Mass.)

What is the Best Setting for these Cards?

EDITOR COTTON:

I wish you would ask, through the columns of COTTON, what in the opinion of the readers is the best setting for the back of H. & B. cards—that is, what setting will take out the most motes and leaf, at the same time keeping this waste free from lint? I am having some trouble with too much good staple going into the waste box and under the licker-in.

Contributor 213.

Solves "Hoosier's" Slasher Problem.

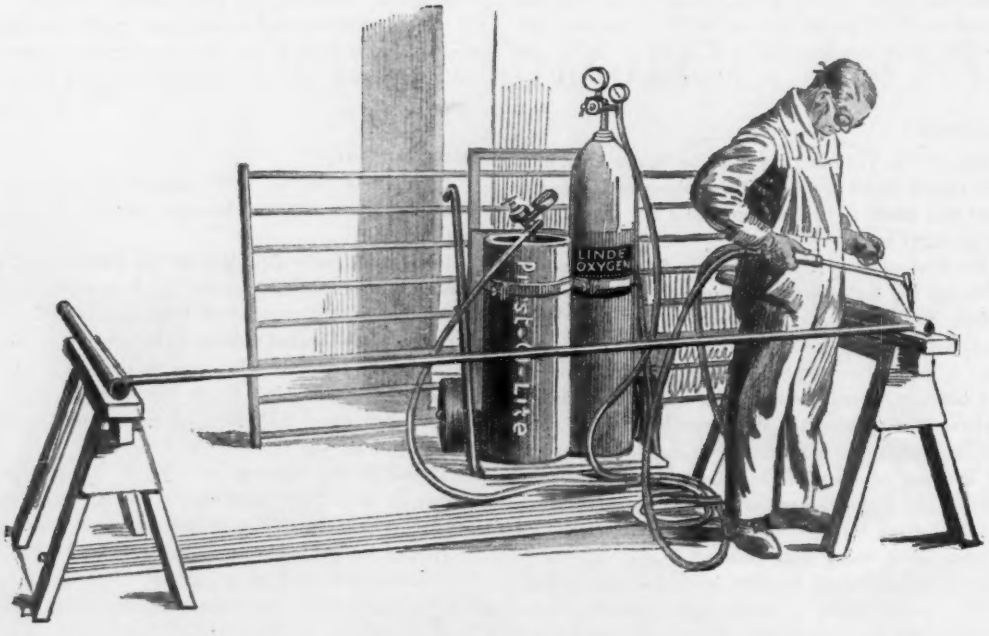
EDITOR COTTON:

I will endeavor to help "Hoosier" with regard to the trouble of which he writes in the May issue. He does not give us much to go by, but from what I can gather, his set is too light; that is, there are not enough ends in the set, or in other words, it is too thin.

I will take it for granted that he is trying to make top beams for some special weave with, say, 800 or 1,200 ends, 30s/1 or 40s/1 yarn. If so, it can't be done successfully on a two-cylinder slasher at 54¼ inches.

"Hoosier" mentions having read something about a taping board, written by a superintendent over in Carolina. This gentleman had some difficulty with a light set which gave trouble by going into strings on the cylinder and breaking at the rods on the front. He made a board with grooves or spaces in it and put so many ends into each of these grooves, or, as I understand it, he condensed the yarn into so many tapes, with empty spaces alternating, which gave a remedy for twisting up on the cylinder.

That probably was some improvement, but I will now



Welding scrap pipe into fences and railings

This is a typical salvaging operation—making scrap pipe do duty as fences and railings.

A little thought and the proper use of oxwelding and cutting will effect tremendous savings by putting back on the job—or on a new job—metal parts classed as "through."

A certain live superintendent of a New Jersey plant, awake to the possibilities of oxy-acetylene, has saved his company $150,000 in three years—much of it by utilizing materials salvaged from scrap for the fabrication of plant equipment which otherwise would have been purchased new.

Oxweld Resident Engineers in more than fifty cities are ready at all times to aid in your welding and cutting problems and to point out latest practices in repair or reclamation.

Write for illustrated book, "Oxweld Can Do It."

OXWELD ACETYLENE COMPANY

Newark, N. J. Chicago San Francisco

Oxweld

WELDING AND CUTTING APPARATUS

WORLD'S LARGEST MANUFACTURERS OF WELDING AND CUTTING EQUIPMENT

explain a method which I have found to be much better in every respect—and I have had occasion to experiment with all the remedies as orders come in for all kinds of commission warps on beams, slashed, from 300 up to 4,000 ends, white and up to five and six colors, loom beams from 20 to 108 inches, these all done on a slasher with a seven-foot and a five-foot cylinder, 72 inches.

To begin with, when the sets get too tight or too thin to run on two cylinders, I just cut out the small cylinder. Having an extra roll up between the two cylinders, the sheet of yarn, when laced up properly on the large cylinder gets nearly all the circumference of same.

Now if I were going to make a set of just 800 ends, I would have two beams of 400 ends and place these in the upper part of the beam creel, both running from the top, and having a single thread lease in them. Then get two wooden pieces, one on each side of the beam creel, and fasten on the bottom of the creel, a distance of about one foot from the size box. Then put a warper comb into these wooden stands, the bottom of the comb to be almost level with the top of the first wooden roller that leads into the size box.

Then, proceeding to put in the yarn, take the yarn from the first beam nearest the comb, lay in a single end in each dent. For instance, take a 600 dent comb, spread at 54 inches; this would figure out 11 dents per inch. Then 400 dents ÷ 11 = 37 inches, nearly, which would be 17 inches narrower than the section beams, or 8½ inches on each side. This would run all right, or in this case, put the beams farther back from the comb, or one can lay in at 54 inches, leaving 17 inches in the center empty.

Getting back to laying in the yarn, first put one end in each dent from the first beam, then take the second or back beam and do the same. That gives two ends in the dent (put a cap on the comb)—the slasher stands are not made for this way of placing beams. The front beam should be about 1½ to 2 inches lower than the back beam to keep the sheds from touching each other until they go in the comb. Next, tie on the yarn in the usual way, run the knots down in the size box, having both beams weighted alike. Next pick a lease—two dents or four ends; this depends entirely upon the width of the loom beam—and put in the lease bands. This is for laying in at the front raddle.

Now take a rod and put it in between the two beams, bringing it up close to the comb, then take a small wooden lease rod with a hole in one end, put a double string in it, and insert it through between the two sections, putting the loose ends over the selvage in the usual way, and we are all ready for a good run—no stringing on the cylinder or breaking at the split rod.

In this case there is only one split rod, and if there were three or five beams, there would still be only one split rod, by using the proper dent reed. This is called tape dressing. Both the Cohoes and Lowell people make double headers for running two light sets at one time, but unless a mill has use for one of that kind all the time, it would not pay to bother with them. A good single slasher with an extra roller between the cylinders can be made to do most any extraordinary kind of stunt that it might be called upon to do; that is, provided the mill has a man who knows from experience how to go about it.

There seems to me to be a sort of misunderstanding among some mill men as to what taping means. It does not mean a machine that makes tape. So many ends sized together flat to tie bundles with.

As for the taping board, that was new to me until it was mentioned in COTTON recently. A taping machine or a tape dresser is just a single cylinder machine. One can use it to slash, putting the section beams in over and under in the usual way, and when used as a taper the beams all run individually from the top, each section going over a separate iron rod to keep the yarn from rubbing the next section, these division rods are about two feet from the brass reed, the reed about eight inches deep, having a hook soldered on near the top of the dent. Also the bottom of the reed, every four alternate dents are blocked. All the yarn is twisted two threads in a dent; no matter how many colors or beams, and there is always just one split rod at the front.

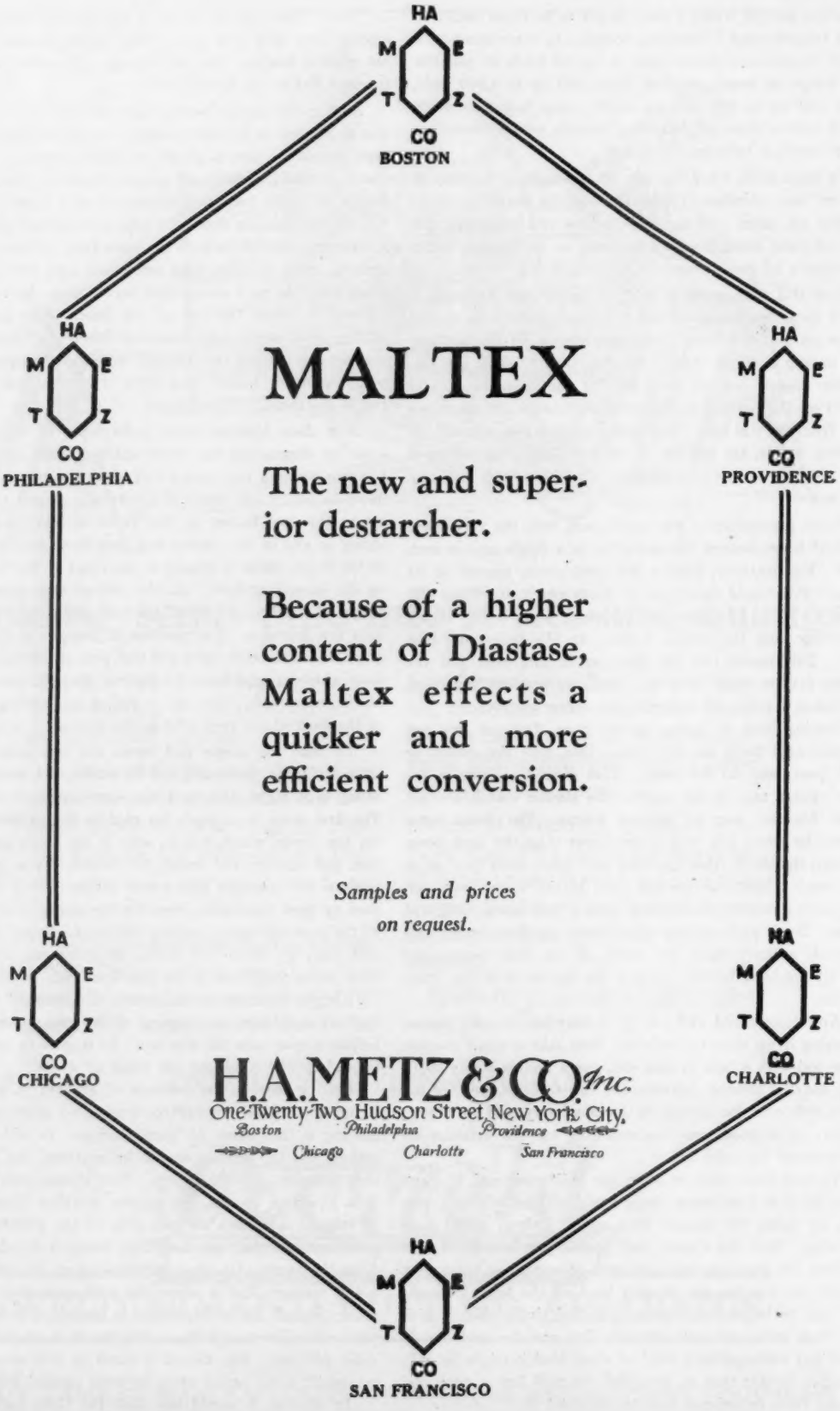
Now these blocked dents make tapes of eight threads each, by depressing the whole sheet of yarn and running a string through you have a half lease of eight ends up and down to lay in 375 dents at the front. A rod is kept between the two halves at the front of the lease reed, a string is put in this center and sent through for the split at the front, which is placed at the front of the raddle next to the spreading bars. At the end of each loom beam a single thread lease is taken, the man and helper doing this in a few minutes. The machine is stopped at the last cut mark, the man takes up a rod and puts it through the half-shed which is kept open by the rod already there in front of the lease reed. This one is pulled out leaving the other at the back of the reed next to the beams.

To take the single end lease, the two men have the lease string in the small rod all ready, the sheet of yarn being kept tight, the reed has some space in its frame. The first move is to push the reed to the proper side, lift the top shade, which will all stay in the hooks on the reed, then put another rod under the bottom shade, pulling the reed to the opposite side a few inches lifting the bottom shed up past the hooks, inserting the string in front, tighten the yarn up again, putting the second string in the original half, go on to the front, inserting the lease on the loom beam, still leaving the one split rod.

I might mention for the benefit of "Hoosier" and others that all condensing or shaping of the yarn should be done before it goes into the size box. If it goes in crooked and twisted it will come out the same or worse.

Getting back to the question of grooves, to my mind it is not a practical way of condensing or contracting or of making a thin sheet of yarn thicker. It will get it together, but the spread cannot be uniform, for the reason that the sheet is 54¼ inches. Now if one puts that sheet into alternate spaces, no matter whether these are flat or beveled, the yarn at each side of the grooves must be piled up more ends per inch than where it is going straight from the beam. One has only to look at the condenser on a ball warper, that is where the yarn goes over the return roller through the half-trumpet, to see where it does not lay uniform. The center is as thin as it is at the reed, the sides pile up. The use of a comb in this case is just a makeshift when called upon to make special jobs.

In closing, I would say that for these light sets the


HA
M E
T Z
CO
BOSTON
HA
M E
T Z
CO
PHILADELPHIA
HA
M E
T Z
CO
PROVIDENCE
MALTEX
The new and superior destarcher.
Because of a higher content of Diastase, Maltex effects a quicker and more efficient conversion.
Samples and prices on request.
HA
M E
T Z
CO
CHICAGO
HA
M E
T Z
CO
CHARLOTTE
H.A.METZ & CO. Inc.
One-Twenty-Two Hudson Street, New York City.
Boston Philadelphia Providence
Chicago Charlotte San Francisco
HA
M E
T Z
CO
SAN FRANCISCO

cylinder should be gear-driven, and the proper cloth used on the take-up roll. Mack (Ga.)

Finishing Pant and Trunk Linings.

EDITOR COTTON:

I shall appreciate it if, through "How Other Men Manage," you will secure for me a good formula or formulas for finishing pant linings and trunk linings.

C. K. (Wis.)

EDITOR COTTON:

One could reply more intelligently to "C. K.'s" inquiry if he had favored us with a small sample of the finished goods to which he refers. There are many styles of pant linings and several styles of trunk linings, therefore, anything that I can say in reply to "C. K." must be, to some extent, general.

One style of pant lining with which I am familiar is used largely in a printed form, though it is also used in the piece-dyed shape; it finishes firm and mellow and glossy —but not glazed:

GRAY CLOTH—BEFORE BLEACHING.

Length	60 yards
Width	41 inches
Counts	80 x 48
Weight	12 pounds
Finished Width	39 inches

After bleaching and dyeing or printing, the cloth is starched twice on the *back* only, on the backfilling machine with the following mixture:

Corn Starch	44 pounds
China Clay	90 pounds
Oliene Oil (50 per cent)	2 gallons
Ultramarine blue	2 pints
Water sufficient to make when boiled	100 gallons

Boil 20 minutes

This is for printed cloths with white grounds. If the goods are dyed the blueing must be left out and the starch mixture should be colored, if possible, the same color as the goods so that the clay will not show through from the back.

After starching and drying the goods are allowed to cool. They are then conditioned on the damping machine, and allowed to lie for two hours, after which they are heavily hot calendered on a dead set calender (3 to 5 bowls) using a heavy pressure. They are then stretched to width on a stretcher and heavily calendered again.

The following is for a trunk lining finish:

GRAY CLOTH—BEFORE BLEACHING.

Length	70 yards
Width	41 inches
Counts	76 x48
Weight	10½ pounds
Finished width	39½ inches

After bleaching, dyeing and mangling the cloth is dried and then filled on a three-bowled mangle with the following mixture:

Corn Starch	100 pounds
Barytes	50 pounds
Bone Fat	12 pounds
Water Sufficient to make when boiled	100 gallons

Boil 10 minutes.

After once filling, the cloth must be dried and starched again with the same mixture, then dried and allowed to cool. The cloth is then well conditioned on the damping machine and allowed to lie about two hours. It is afterward passed through a friction calender using a heavy pressure but a low temperature. It is then stretched to width on a stretcher and run twice more on the friction calender. The cloth is then passed over a hot cylinder to drive out the moisture and remove the luster.

The idea is to so finish the cloth as to close up all the interstices between the threads and to make the goods smooth without being glazed. Should more glaze be required the calender can be run hotter.

Another good formula for trunk linings is as follows:

Corn Starch	15 pounds
Barytes	20 pounds
Water	15 gallons

Cool this mixture down to 150 degrees F. and then add one pound of diastafor, one pound stearine, and four pounds of glue, all previously dissolved in *lukewarm* water. Dissolve the glue first in hot water, then the stearine in the glue and pour it into the starch. Then add the diastafor previously dissolved in lukewarm water. The idea that I wish to convey is that no *hot* water must touch the diastafor or it will destroy its action; that is why we cool the starch down to 150 degrees F. In a short time after the diastafor is added the starch will go thin with stirring (it must be kept stirring). This will take only a few minutes and just as soon as the starch begins to liquefy and go thin turn on the steam and boil all up. I would say that the glue and wax can be added during this final boil up and it would perhaps be best.

The final boiling is done to stop the further action of the diastafor, if this action were not stopped either by boiling or the addition of an alkali, the diastafor would convert all the starch into sugar and destroy its stiffening power. After starching and drying the goods must be run again, dried, damped and calendered, stretched, etc., as in the previous methods.

I would say in conclusion that as most of these cloths for trunk linings are run twice *through* the starch and are for dyeing into light shades, the dyeing and starching may be conducted at one operation by adding the coloring matter to the starch.

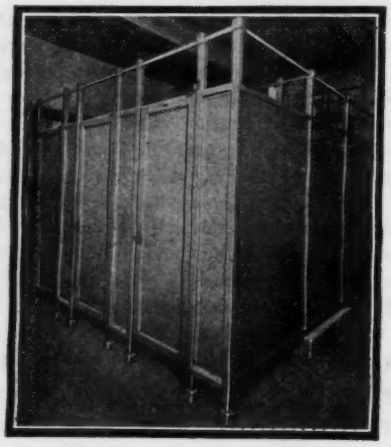
W. B. (Maine.)

"Do Spare Hands on Speeders Pay?"

EDITOR COTTON:

"Do spare hands on speeders pay?," asks "B. E. (Texas)" in the May issue.

It has been my experience that spare hands on speeders do pay. If we do not take boys and girls and use them as spare hands, where are our future frame hands coming from; then again, if we have frame hands running two and three frames with one frame creeling, and another doffing, and have no spare hands, we have two frames stopped, whereas if we had a spare hand to doff the frame we would only have one.



A Sanymetal installation in the Church of All Nations, New York City

A Guardian of Cleanliness

MODERN industrial plants require toilet partitions of simple and rugged construction, easy to keep spick-and-span under the most severe conditions of everyday service. Sanymetal Partitions have taken first place among owners who insist on these qualities. You will find Sanymetal as perfect a guardian of cleanliness as any toilet partition can possibly be. Specify it by name.

Designed for toilets, urinals, showers, dressing rooms, and toilet wainscot. Standard units adaptable to any layout. Made always of Armco Ingot Iron. Water-shedding construction. Doors equipped with Sanymetal Gravity Roller Hinges. Write today for new Catalog No. 5.

Catalog 4 shows Office and Mill Partitions

Armco Iron is a feature for rust-protection.

THE SANYMETAL PRODUCTS CO.
986 E. 64th Street **Cleveland, O.**

Sanymetal
TRADE MARK U.S. REG.
Toilet and Office Partitions

Creo-pine Sub-Flooring

Specified!
by leading Construction Engineers

One of the leading construction engineers in the country in specifying the sub-flooring for a huge cotton mill, insisted that it come up to the standard of Creo-pine Sub-Flooring—produced by the Southern Wood Preserving Company.

Engineers are generally recognizing the fact that Creo-pine is the **standard** sub-flooring. Many mill owners are insisting upon it in new construction programs.

Write for full details today.

Southern Wood Preserving Co.
Creosoting and Creo-pine Products
ATLANTA, GA.

I will admit that spare hands require close supervision to make them pay. But in my opinion, every card room, no matter how small, should have at least one spare hand walking the floor who can run frames. Then if a frame hand gets hurt or sick, there is someone to fill his place. Even if it doesn't happen, the knowledge that someone is there to take it in case it should occur saves an overseer worry enough to more than pay for this hand; and everyone knows a worried overseer is a poor dividend getter.

Then again, this spare hand comes in powerful handy when two creels on the same set of frames run out together. It has been my experience that this will happen no matter how closely it is guarded against.

Ted (Ga.)

A Layout for 50s Warp Yarn.

EDITOR COTTON:

In the May issue of COTTON, "W. M. (Mass.)" asks for a complete lay-out for 50s warp warn made from 1⅛ to 1¼-inch middling cotton, with the settings, speeds, drafts, and amount of twist for each process. Following is a good lay-out for the weights and drafts:

We will start with a 12-ounce lap at the back of the card, using three processes of drawing, doubling six on each, three processes of roving, doubling two on the intermediate, roving and spinning, allowing six per cent waste at the card.

$12 \times 437.5 = 5250$ grain lap.

$$\frac{8.33}{5250} = .00158 \text{ hank lap.}$$

$$\frac{\text{Count} + \text{doublings} - 6\% \text{ waste at card}}{\text{hank lap}} = \text{total draft}$$

$$\frac{50 \times 6 \times 6 \times 6 \times 2 \times 2 \times 2 \times .94}{.00158} = 51{,}402{,}531$$

total draft.

$100 \times 6 \times 6 \times 6 \times 4.5 \times 6.5 \times 7.5 \times 10 = 47{,}385{,}000$ trial draft.

$$\frac{51{,}402{,}531}{47{,}385{,}000} = 1.084 \text{ increased draft to be added to trial draft.}$$

Increase the spinning draft to 10.5, then:

$$\frac{1.084 \times 10}{10.5} = 1.032 \text{ increase left.}$$

Put the remainder of the increase on the roving frame:

$1.032 \times 7.5 = 7.74$ draft to be used on roving frame.

The correct drafts on the various machines starting with the card, are now:

100, 6, 6, 6, 4.5, 6.5, 7.74, 10.5.

$$\frac{5250 \times .94}{100} = 49.35 \text{ grain sliver at card.}$$

$$\frac{49.35 \times 6}{6} = 49.35 \text{ grain sliver at drawings.}$$

$$\frac{8.33}{49.35} = .168 \text{ hank sliver.}$$

$.168 \times 4.5 = .756$ hank at slubber.

$$\frac{.756 \times 6.5}{2} = 2.457 \text{ hank at intermediate.}$$

$$\frac{2.457 \times 7.74}{2} = 9.5 \text{ hank at roving frame.}$$

$$\frac{9.5 \times 10.5}{2} = 49.87 \text{ or 50s at spinning.}$$

In my opinion the opening and picking rooms are the two most important rooms in the mill, and should receive special consideration. It is impossible to make good, even yarn unless it is started right and the place to start is in the opening room. A bad or uneven lap may mean hundreds or thousands of yards of uneven yarn as it is practically impossible to completely rectify an error made in the picker room. To get the best results in making 50s yarn from middling cotton, a bale breaker and a Crighton opener should be used in the opening room. The cotton may be blown from the Crighton opener to a condenser and then to the mixing bins and then fed into the breaker picker by hand, or it may be blown to a condenser and distributed automatically to the breaker pickers by means of an endless traveling belt and a damper arrangement. Air is the best agent for opening up cotton and by using the bins the cotton is opened more thoroughly. However, the evenness of a breaker lap depends largely on the regularity with which the stock is delivered from the automatic feeder and this in turn depends upon the manner in which the stock is fed to the hopper, so the use of the automatic distributor provides a constant and regular feed without attention and aids in the making of an even lap.

In setting the stripping roll to the lifting apron it should be set as close as possible. If it is desired to feed more or less cotton to the opener the speed of the lifting apron should be changed, and not the distance between the lifting apron and the stripping roll. I think two processes of picking would be sufficient for middling cotton if a Crighton opener is used in the opening room. There is a growing tendency to omit the intermediate lapper as the severe beating that the cotton receives in the picking machines tends to damage the fibers and by using a Crigton opener, which cleans and opens cotton very effectively, the cotton should be cleaned sufficiently with two processes of picking. I should think that 35 or 40 blows per inch or about 900 r. p. m. for a three-blade beater on the breaker picker and a few less on the finisher picker would be a good speed for the beaters on middling cotton.

It is impossible to say exactly how much beating the cotton should receive because this will vary with various conditions, and the correct amount can only be obtained by experience. It should receive just enough to remove the dirt and foreign matter and no more as too much beating will damage the fiber. A good way to tell whether the cotton is receiving too much beating is to notice the trumpets on the cards and drawing frames. If a lot of lint, fly, and very short fiber collects around the trumpets it is generally a good sign that the cotton is receiving too much

THE LEATHER
WITH THE HAIR ON

Bondaron
HARNESS
STRAPS

Are Your Harness Straps of Indifferent Quality

Often the life and strength of ordinary leather have gone before it leaves the tannery. The lime dip and quick tanning methods destroy the best that is in the hide.

Bondaron Harness Straps have enormous strength and are long enduring because the leather has life in it. After long service Bondaron Harness Straps are better than new straps of ordinary leather.

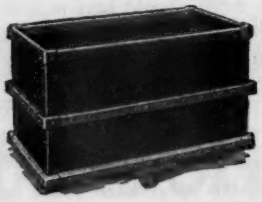
Use Bondaron to save the cost of replacements and the annoyance and expense of looms stopped for repairs. That is the only true economy in harness straps.

Bondaron Textile Leathers are made from Foreign Hides that have been tanned by a remarkable secret process. Their strength is assured by the tanning process and as a sign of that strength the hair is left on the leather, showing that it has never been through the lime dip.

You will save money by using only Bondaron for your Harness Straps, Check, Lug, Heel, Tugger or Bumper Straps, Round or Flat Belting, Endless Cone Belts or Picking Bands.

CHARLES Bond COMPANY

Leather Carriers, Importers and Belt Manufacturers
617-619 Arch Street Philadelphia, Pa.



Tough is the Word

We could make a mill truck that would never wear out. It would be no cinch to push about and it would certainly make an awful racket when it rumbled by.

But you can err on the side of economy.

We built the Laminar as the happy medium. It is made of Vul-Cot fibre—feather weight, "a pipe to push," as a mill friend of ours puts it—yet so husky, so downright tough that it will stand the gaff of mill usage for years and years.

Laminar Mill Trucks and Roving Cans come in varying shapes and sizes. We have them for every job in your plant and they are exceptionally reasonable in price.

Drop us a line and we will gladly send you full particulars and price list.

National Vulcanized Fibre Company
Wilmington, Del.

One Man Can Paint 3000 sq. feet per hour

—by the use of the MULTIBLASTER. In this time he can give that entire area a thorough coating equal to two or three coats by brush! And aside from the paint saved by eliminating the extra coats, the "man behind the gun" operating a MULTIBLASTER can do six times as much painting as a brush worker. More uniform distribution and

Less Paint Wasted

by this method. Paint is drawn into the spray by suction which keeps ingredients stirred up and aids in obtaining a uniform coat, also applying all preserving properties of the mixture.

The MULTIBLASTER can also be used effectively on cleaning machinery and equipment with or without a cleaning solvent.

May we send you via Parcels Post a MULTIBLASTER on 10 days' trial? Ready for instant attachment to your air-lines—paint syphoned from any convenient container—Price $12.00, F. O. B. BUFFALO. Shipping weight 3 lbs. Requires 40-50 lbs. air pressure.

"The Man Behind the Gun"
(COPYRIGHTED)

GEO. M. STOWE, JR.
MANUFACTURER
FOREST AND WEST STS.
BUFFALO, NEW YORK

Makers also of Stowe Multiblasters for Sand Blasting

STOWE MULTIBLASTER
FOR THE MECHANICAL APPLICATION OF PAINT

beating and the fibers are being broken.

The number of blows per inch may be found by multiplying the r. p. m. of the beater by the number of blades and dividing this by the surface speed of the feed roll. A two-blade beater 16 inches in diameter should be run at about 1,000 r. p. m. for 1⅛-inch or 1¼-inch stock, or a three-blade beater about 800 or 900 r. p. m. The stripping bar should be set about ⅛ of an inch from the beater and the feed roll ¼ to 5/16 of an inch from the beater.

The diameter of the feed rolls should be governed by the length of the staple and in this case should be 2½ inches in diameter. A three-inch diameter roll should be used for long staple and a two-inch diameter for short staple—this is an important point which is not often considered in a mill. The grid bars should be set about ⅜ of an inch from the beater at the top, gradually increasing to ¾ of an inch at the bottom. No set rule can be given for the speed of the fan as the conditions in different machines and different rooms vary. The speed should be arranged so that the cotton will be brought forward and laid on the cages in good, even layers. If three processes of picking are used the weights of the laps should be: breaker 15 ounces; intermediate, 13 ounces; finisher, 12 ounces; if only two are used the breaker lap may be 14 or 15 ounces and the finisher lap 12 ounces.

The card cylinder should be run at 165 r. p. m. and a good speed for the licker-in is about 400 r. p. m., and the doffer about 7 or 8 r. p. m. The speed of the licker-in should also be governed by the amount of cleaning desired and it may be necessary to increase or slow down this speed in order to get the best results. The following settings should give good results: feed plate to licker-in, 10/1000; licker-in to knife bars, 10/1000 to 12/1000; licker-in to cylinder, 7/1000; cylinder to doffer, 5/1000; doffer comb to doffer, 7/1000. The cylinder casing should be set as high as possible between the cylinder and licker-in without touching either one, 10/1000 gauge being used to make this setting. From this point it may be gradually drawn off so that at the front it will be 5/16 or ¼ of an inch from the cylinder. In setting the licker-in casing the front lip should be set 5/16 or ¼ of an inch from the licker-in, gradually coming closer back to the point where the 10/1000 gauge was used. The top flats may be set to a 9 gauge or a graduated setting may be used, starting with a 9 gauge at the back and gradually decreasing to a 7 gauge at the front. The front plate should be set from a 17 to a 22 gauge between the plate and the cylinder and the plate and the flats, the setting depending upon the weight of the top flat strips desired. To get heavier strips, set the plate closer to the flats and to get lighter strips set the plate closer to the cylinder. About six per cent waste should be taken out at the card.

A good speed for the drawing frame would be about 400 r. p. m. for leather-covered rolls or about 300 r. p. m. for metallic rolls. The distance from center to center of the first and second drawing rolls should be ⅛ of an inch over the length of the staple; the distance from the second to third rolls ¼ of an inch over the length of the staple; and the distance from the third to the fourth rolls ⅜ of an inch over the length of the staple. This setting is for leather-covered rolls. If metallic rolls are used set ¼ of an inch wider at each point. The hole in the trumpet should be large enough for the sliver to pass through without too much friction and small enough to properly condense the sliver. The distance from the point of the trumpet to the calender roll should be set so that the end will break between the trumpet and roll when the trumpet clogs up.

A good spindle speed for the slubber would be 600 r. p. m., intermediate, 1050 r. p. m.; fine roving, 1200 r. p. m. The front and middle drawing rolls for the slubber and intermediate should be set ⅛ of an inch over the length of the staple from center to center; middle and back rolls ¼ of an inch over the length of staple from center to center. On the roving frame the front and middle roll set 5/16 of an inch over the length of the staple; middle and back 5/16 of an inch over the length of the staple. On the slubber the amount of twist would be $\sqrt{.756} \times .90$ or .779 turns per inch, intermediate $\sqrt{2.45} \times .95$ or 1.46 turns per inch, and roving $\sqrt{9.5} \times .98$ or 3.02 turns per inch. Just enough twist should be inserted so that the roving will unwind at the next process, any twist over this amount will cause a loss in production and will also make a weaker yarn.

A good spindle speed for the spinning frame would be about 9,800 r. p. m. for 50s warp yarn. If the rolls are self-weighted they should be set a little under the length of the staple and if they are weighted they should be set a little over the length of the staple. The amount of twist to be inserted would depend upon the kind of cloth that the yarn would go into and the twist multipliers used may be 4.75, 4.50 or 4.25—4.75 being the ordinary twist multiplier for ring frames on warp, and for 50s warp yarn the twist would be $\sqrt{50} \times 4.75$ or 33.58 turns per inch. For mule spun warp yarn the twist multipliers would vary from 4.75 to 3.50.

I have obtained good results from these settings, speeds, etc., and I hope that "W. M." will find them helpful.

N. B. M. (Va.)

Regain in Cotton.

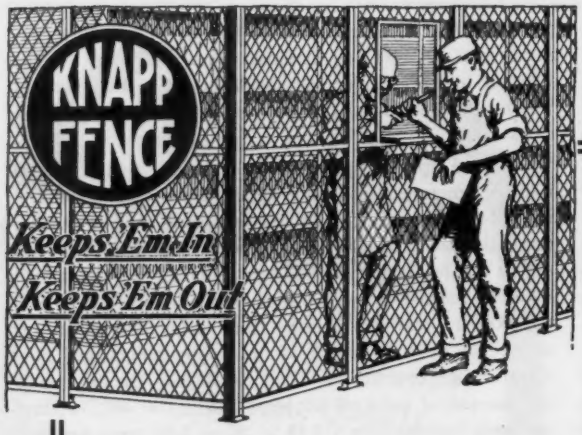
EDITOR COTTON:

One proposition that is puzzling to many mill men at this time is the loss on cloth from loom to case, and also the evaporation in the raw stock, yarn and cloth. Following is a method of finding the loss on cloth from loom to case which has been found very useful, and which can be used for all classes of material.

For illustration, let us assume that we are making a heavy cloth, say, 22.8 ounces to the yard, 55 yards to the cut. Again, let us assume that the finished yards of this same cloth is 56⅜ and the finished weight 16.6 ounces. Multiplying the number of yards, 55, by the weight, 22.8, we have, $22.8 \times 55 = 1{,}254$. Next, multiplying the finished yards, 56⅜, by the finished weight, 16.6, we get, $16.6 \times 56\frac{3}{8} = 935.82$. Now, subtracting 935.82 from 1,254, we have 318.18, which represents the loss in stretch and evaporation, 24.57 per cent or practically one-fourth of 1,254.

If, on the other hand, the cloth lost 25 per cent, the following example shows how to determine the inches per yard to shrink for a certain weight:

Using the foregoing figures, (1), find the loss in one yard. 28.8×25 per cent $= 5.70$. Then, $22.8 - 5.70$



KNAPP STANDARD WIRE PARTITIONS

Some of the Many Uses
Tool cribs, factory subdivisions, stock rooms, department offices, shop restaurants, wash rooms, locker rooms, passageways, etc.

Guard Tools From Theft

With valuable tools lying carelessly about your mill, your workmen are apt to be tempted to "borrow" some of these tools. That doesn't reduce your expenses or increase your profits.

The loss of small items can rapidly run into large sums.

By installing Knapp Standard Wire Partitions in your mill and keeping your tools and small equipment centralized, you not only minimize a great loss, but save your workmen a great deal of time. They will know immediately where to get a certain tool, and where to put it back when not in use. It creates care in the minds of your workmen.

Knapp Standard Wire Partitions are easily installed, moved or rearranged to meet varying requirements.

Let us hear from you regarding your conditions and send sketch or dimensions for prices and details.

Let Us Save You Money On
Window Guards, Factory Guards
Skylight Guards, Factory Gates, etc.

Attractive Opportunity for Live Sales Agents

THE KNAPP FENCE CO., E. 134th St., CLEVELAND, OHIO

You need them in your business!

On your looms they are Assistants to the
Manager
Superintendent
Accountant
Cost Clerk
Pay Master
Foreman
Timekeeper
and Workman.

They give an absolutely accurate production record of each machine —at the instant it is made.

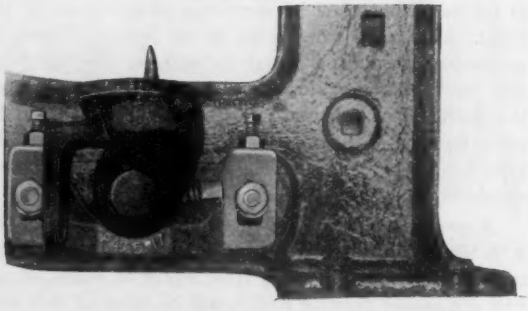
Consider the measuring, counting, figuring, and disputes they eliminate.

Shall we send all the facts?

ROOT
BRISTOL, CONN.

Southern Office: 14½ S. Church St., Charlotte, N. C.

Corn Rocker and Parallel Bearings for Automatic Looms



Over 175,000 Looms equipped and every user satisfied

BAHAN TEXTILE MCH. CO.
GREENVILLE, S. C.

= 17.10, the weight of the cloth at the loom (22-ounce cloth desired). Now, 17.10 × 36 = 615.60 ÷ 22 = 27 21/22, or practically eight inches per yard to shrink to get 22 ounces.

This may or may not mean much to some mill men, but to those to whom it means nothing, I suggest the following test: Take a cut of cloth and place it in the boiler room for a day or two, and then note the difference in weight before and after.

The loss in evaporation in any cotton mill is great. The average mill uses about 100 bales of cotton a week. These average about 500 pounds to the bale. The average loss is about seven pounds to the bale, which means 700 pounds loss for 100 bales. Quite an item.

The normal amount of moisture in cotton is variously estimated from 7½ to 8½ per cent, all of which estimates are doubtless equally correct as the amount of moisture varies with the locality in which the cotton grew and upon climatic variations from year to year. There is a very marked difference in the physical properties of one crop as compared to another, and any attempt to work one year's product with hard and fast rules deduced from the previous year will be disappointing. The behavior of one crop when worked at a certain standard of moisture in the different departments is a guide for the next one, but not an infallible rule.

Remember this: As a rule, the higher the humidity, the higher the breaking strength of the yarn, and less ends will break in the spinning with the humidity at from 65 to 75 per cent. The fibers in the yarns lie closer together as the humidity is increased, producing a more compact and less fuzzy yarn, that will look smaller in diameter. The higher the humidity the less fly collects on the frames. Still, in the year of our Lord 1923, you will find mills without humidifiers, and worse yet, you will find mills fully equipped that do not operate them. Wash (Mass.)

Asks for a "Square Deal."

EDITOR COTTON:

In reading over the late articles in COTTON, I have taken some exceptions to the men who have written about "long experience and practical work" being the essential in making the best overseers and superintendents. I am writing the following as I feel on the subject, as it is brought home to me.

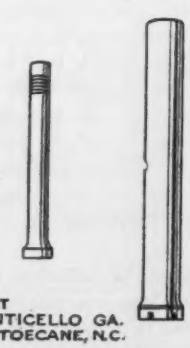
A boy goes to college and learns languages, sciences, philosophy and other courses in the curriculum, not just for what these studies teach him. There are many who never remember one half of their book learning five years after they procure their degree. A man specializing in chemistry to be a chemist retains everything that pertains to that subject. However, these specialists are in the minority, and the majority of college men take only a well-rounded academic course. Why spend money to learn that which will not be remembered? Why waste four or more years loafing? The man who comes from college is trained. His mind is more able to work over quickly anything new or strange that is put before him, than is the mind of a man without a higher education. A college man is a valuable asset to any business, for four years of college training teaches that very scarce resource—the ability to grasp quickly and assimilate readily.

I know several young fellows between the ages of twenty-four and twenty-eight that are in the same predicament as myself. We are all graduates from straight academic college courses, with no specialties, and we are up against that "I have worked my way up from sweeper" clique. I do not mean that expression scornfully, for I feel that a man with very little education, who has risen in authority through long hard years of experience, deserves the greatest credit in the world. They are few in number because theirs was a difficult task. Give credit where credit is due.

I remember my father saying to me when I was in grammar school, "I hope to make it so, son, that you'll never have to go through what I've had to in order to hold a good position." Although he died shortly after, I had a college education, but the past five years have made me regret sincerely that I ever went even to high school. Contact with men who have risen from nothing in twenty, thirty, forty or fifty years has embittered all us young men. These "have arisens" make it harder for the young men to learn, for they only learned by long experience and are very unwilling to acknowledge that ambitious, earnest application should be rewarded. I can almost hear, as I write this, the words that some men will say as they read, "Some smart chap who thinks he knows it all." I do not know it all, but I do know that a man with an education is able to profit by the experiences of others and can learn the workings of the various machines more quickly. I am not knocking "Bab (N. C.)" but he says, "That man (college or textile school man) also ought to get the practical part." He got both but it took a long time and he deserves credit, but he should give credit to those who have helped him.

If you want to see human nature in a "glorious" form, you must go to a cotton mill of the kind I describe where there is a man just fresh from college. Does he get help? He does not. His fellow workers make fun of his decent manners and speech, and his bosses are going to break the back of this "rah-rah boy who has never done a stroke of work in his life, while they have been sweating their lives out in mills since fifteen." And when this boy starts to pick up some knowledge about the machines around him, they put him to scrubbing floors and cleaning pipes for the "practical part." More than once I've been told to "go back to college and take a course in scrubbing floors," and also that "when I had been at work as long as they, I would only *begin* to know something."

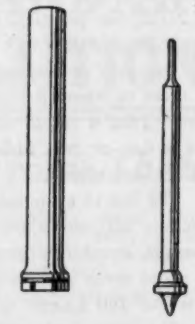
Do these people realize that head work is a great deal more tiring than manual labor? Do they realize that they came to the mill around fourteen or earlier and were absolutely green, with practically no formed ideas, and twenty-five cents was then bigger to them than is twenty-five dollars now? Do they realize that they were worth very little to their bosses for several years? Do they realize that college men start to intensify their mind training at fifteen or younger (I entered preparatory school at twelve) and stay in school until twenty-one to twenty-five? Do they realize that the average "rah-rah boy" went eight years in grammar, four years in high, and four years in college and that totals sixteen years of preparation for a good position in later life? All this time they *learn to learn*, to know and meet people, to play and work equally well, and to be fair-minded and square. Many of them work summer vacations



MILLS AT
MONTICELLO GA.
AND TOECANE, N.C.

JORDAN
MANUFACTURING COMPANY
BOBBINS

MONTICELLO, GEORGIA



PAINT ECONOMY

is not the price per gallon paid but the number of years of service a paint will give.

Because of its better protective qualities Dixon's Silica-Graphite paint makes frequent repainting unnecessary and so gives better protection at less cost.

It is a natural combination of flake graphite and silica, mined only by ourselves. The vehicle is the pure boiled linseed oil.

Dixon's Silica-Graphite Paint will not peal or crack or flake off because of the natural elasticity of the flake graphite, while the silica is an anchor that withstands wear.

It is made in FIRST QUALITY only with a reputation for economy covering a period of 50 years.

Write for Booklet No. 34-B
and long service records.

JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.
Established 1827

GARLAND

NOT A
TWISTED EYE
In "GARLAND"
Cabled Twine Loom Harnesses

Our experience shows that for all ordinary weaving, cabled wine loom harnesses weave best and wear longest. This twine is hard to knit and difficult to finish but our harnesses are so carefully made and so thoroughly inspected that every cabled twine harness which we send out is smoothly finished and free from twisted eyes.

TRADE MARK

GARLAND MFG. CO.
SACO, MAINE

50% Better than ever from YOUR Standpoint

SEVERAL NEW FEATURES

have been added to the "1912" Cloth Cutting, Folding and Winding Machine which add at least 50 per cent to its value to YOU.

It will cut your cloth—fold the edges—roll it up and give you an exact measurement of every piece of cloth going through the machine.

It saves time, labor, machines and cloth.

YOU ONLY NEED ONE MACHINE where before it required two, and you get an extra strip from each bolt of cloth.

It cuts the corners of expenses in every way and leads to more and greater profits.

THE ENORMOUS SAVING WILL INTEREST YOU.

Mail a card for complete information and prices.

When in need of special machinery, write us.

J. A. FIRSCHING, 614 Broad St., Utica, N. Y., U. S. A., Dept. "O."

Bradley Stencil Machine

The Bradley Stencil Machine makes Stencils in half a minute at reduced cost of 1-10c each. Write for catalogue and price list.

In universal use by thousands of manufacturers and shippers.

Oil Paper, Stencil Paper and Inks.
Bradley Ball Stencil Pot uses Liquid Ink for marking and stenciling. Price 60c or $6.00 per doz. Manufacturers of Oil Stencil Papers.

Write for Prices and Samples

A. J. BRADLEY MFG. CO.

99 Beekman Street NEW YORK

and it is also true that the men who go into a mill from college are those who have no one to support them, or influence to procure a position that will show advancement.

Then too, when they go into the mill they are not dumb. The greenness and gawkiness wears off very quickly and they can be a help to their bosses, for they are reliable and trustworthy. They think out their problems and do not get excited when something new pops up. Their fellow workers are envious because the college fellows use brains in their work and progress steadily. The bosses, after a while, will depend on them in certain jobs because they know the jobs will be done. But a boss can not keep a college man on his pay-roll at the same pay as the other workers, for it is unfair. Certainly you will not bank your money when there is no interest in the investment, and neither can you expect a man who has a college education to receive nothing on his or his parents' investment.

For example, is the following just? A man graduates at the age of twenty-three, works six years (29) to become a second hand, six more (35) to be an overseer, and an indefinite number of years for a superintendency. An overseer makes, let's say $50 per week or $2,600 per year. Is that satisfactory interest on the expenditures of sixteen years of schooling and twelve years marking time? These several college men I speak of have been in the mill two to six years and are drawing down about $1,000 per year, less than many of the ordinary workers who are unable to write their own name and speak about three words of English. No wonder they laugh at us!

It is true that our fingers may be clumsy in piecing up an end, while theirs are skillful, but our minds can tell why that piecing holds and most of their's can not. But do the bosses appreciate these bits of knowledge gleaned in a short time? They do not if they happen to be the men of the "long, practical work" type. Their business takes a life time to learn "just a little bit." That is why the college men who take a real interest in the textile industry have to get out after they had starved a while and go into something else. Give some credit to the college man. He is due a little. We are not pampered, soft "rah-rah" boys and we can and will work willingly under fair conditions. If we learn to run a room, does it matter whether we are 24, 30, or 50 as long as our minds are clear on the job? You cannot make any educated man satisfied and happy on the job by holding him like an uneducated average laborer. His mind degenerates under such treatment.

Are not the old timers willing to let a young man profit by his own hard work if he is deserving? It is peculiar but a young overseer (yes, there are some) will be only too glad to show and help along another young fellow whereas the overseers who took years of narrow-minded, closely guarded "practical work" are usually very silent about dropping some teachings on ever open ears. But they do drop that "after you have worked as long as I, you will only begin to know"—at least some of them do.

H. E. R. (Mass.)

The United Piece Dye Works and the Wiedmann Silk Dyeing Company have been merged under one ownership and control. The combined management will conduct these industries in their respective branches. Plants are located at Lodi, N. J., Hawthorne, N. J., Paterson, N. J., and Allentown, Pa.

On Doing Your Best.

EDITOR COTTON:

When I started my career in cotton manufacturing, 28 years ago, I was put to sweeping in the spinning room; I was between eight and nine years old. I swept for about six months, during which time I learned to doff. My next job was doffing in the spinning room, and I did my best, and during the period of doffing I took advantage of my spare time and learned to run twisters, and was later given a stand of eight sides on twisters. While I was on these sides every moment I had I used in watching the movements of the machines.

One day the boss needed a fixer—his fixer had been given a better place—so he said to him, "Do you know of a man I can get?" The fixer replied, "You have a boy over there running eight sides that can run your job for you." The boss came to me and said, "Son, run the fixing job for me." I said "All right, I will do my best."

I ran the section of 24 spinning frames, 12 twisters, 8 reels, 6 spoolers and one Denn warper for a time, and then one day the boss asked me, "Son, have you ever fixed Foster cone winders?" I answered, "No sir, but what other men have built I can fix." "All right," he said, "we are going to have two Foster winders in here this week and you can put them to running, as I don't know anything about them. I will keep up your other fixing. Put the two winders to running."

Well, right there I made a solemn vow to make good and in about 15 days I had them going nicely, and later the boss came to me and said "The superintendent wants you in the office." Well, I began feeling myself drawing up, but I went out there and the superintendent invited me in and said, "Have a chair, son, while I close the door." He returned to his big spring-back chair, and lit a cigar and smoked and looked at me for at least ten minutes. Finally he said, "Son, you have made a marked success, so your boss reports to me, and in view of his good reports in your behalf I'm going to give you a chance. I want a man to go to the card room Monday as my man is getting through, and I want you to learn those machines in that department. What do you think of that, son?"

"I'll do my best," I answered. "Good enough," said the superintendent. "Tell your boss to come out here. I want to see him." When I got back to our department I told the boss, so he went out to the superintendent's office, got orders what to do and returned. "Son, you can make good," he said, "go to it."

On Monday I went to the carding department, filled with an ambition to make good. I had been in this department about a year, and apparently gave satisfaction. One Saturday the boss spinner came to me and said, "Son, I have traded for a job as superintendent, and our superintendent is going to ask you to take charge of the carding, spinning, twisting and winding. When he offers it to you, take it." About pay time the superintendent sent for me, and said, "Young man (this being the first time he had ever called me 'man') I am putting you in charge of all the inside. You are general overseer. Do you think you can handle it?"

"I'll do my best, sir," I told him, "Well, you will run the job then, good luck to you." I went on about two

COTTON-BLEACHERS!

Submit samples
to your selling agent
of white cottons bleached with
the Solozone Process.

He will appreciate
the unique qualities--
without increase in cost--:

A permanent white
without weakening,
unimpaired softness
and elasticity.

THE ROESSLER & HASSLACHER CHEMICAL CO.

New York

years and one day, to my surprise, the superintendent sent for me, and when I got to his office, he said, "Young man, meet Mr. ———, your new superintendent. He takes charge Monday. I am appointed agent with my headquarters in another city." "Turning to the new superintendent he said, "Here is a man who does his best."

Monday came. I had no education, and in the evening the new superintendent sent for me and said, "Where is your daily report for today?" I began to feel how small I was and said, trembling inwardly, "Mr. ——, our superintendent who has just gone, used to help me on that; he made them out." The new superintendent replied, "Well, if you run this job for me, you'll have to make them out."

On the third day the new superintendent came in the mill with a new man and said to me, "You may work as second hand for Mr. —— if he cares to retain you."

Well, I worked for him a while and finally decided to change. I left on good terms and went to another mill center. There I began as a twister hand, but only for a short time. The overseer sent for me one morning and said, "I have been watching you, and you have been selected to take charge as second hand;" so I went on that job.

As before stated, I had never gone to school, so I began studying a course at night with the American School of Chicago. After some time I was granted a certificate of efficiency, and, being full of ambition to learn the theory of cotton manufacturing, I went to another mill as second hand in spooling, warping and slashing, and then I enrolled with the I. C. S. of Scranton, Pa. Some months later I was engaged as overseer of weaving in a tire fabric plant. One day I was sent for to come to the office. When I got there the secretary-treasurer said, "Long distance wants you." I picked up the receiver, and this is what it was: "Mr.—— would you consider our spinning at so much a day, house rent, etc?" I pondered a moment and replied, "Yes, can take charge in ten days." That was okeh, and the deal was closed.

On the date promised I was on hand, and some time later I was approached and asked if I would be interested in a job as general overseer of carding, spinning, twisting, winding, spooling and weaving at a better salary. I accepted, and held this place for two years and two months. Then I was called for by a still larger mill and asked if I would be interested in a job as overseer of spinning, spooling, twisting, warping and winding in a 40,000-spindle plant. I accepted and had been there nine months when I received a telegram from my present employers asking me if I would be interested in a job as general overseer of carding on 35,000 spindles, coarse numbers. I have been on this job three years and have made a good record with my present employers. But my ambition is to get a superintendent's place.

This is not written to boast, but to illustrate by an actual example that "Old Timer" is right in his contention that the man who tries, who does his best, achieves success in proportion to his ability, and his limitations.

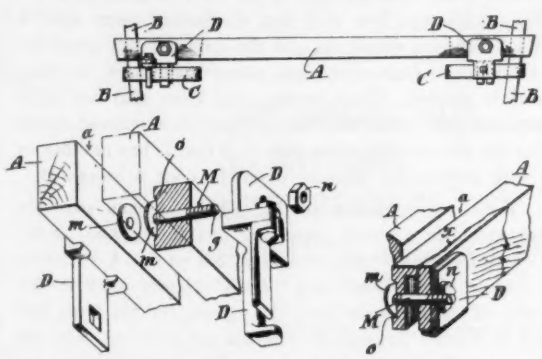
A. B. (Ga.)

It isn't what a man stands for, as much as what he falls for.

New Method to Attach Picker Stick Checks.

An improved method for attaching picker-stick checks to loom lays has been invented by J. B. Fennell and E. B. Flowers of the Hampton Mills Department of the Pacific Mills at Columbia, S. C. This invention is intended to apply to that class of looms on which the picker stick is checked in its movement at opposite ends of the lay by devices usually consisting of leather straps suspended from brackets or hangers. It was devised to overcome the tendency of the lay to split or crack at the ends because of mortises for bolt heads or otherwise.

With this new device the lay does not have to be mortised as heretofore, the brackets or hangers being secured



IN THE SKETCHES A SHOWS THE LOOM LAY, B THE PICKER STICKS, C THE STRAPS OF THE PICKER CHECKS, AND D THE BRACKETS OR HANGERS FOR SUSPENDING THE STRAPS FROM THE LAY.

as shown in the sketches. The bolt *M* is threaded at opposite ends. At one end it receives a relatively thin, flat nut *m* and at its opposite end a nut *n* of the ordinary kind. In applying the bolts and nuts to the lay the nut *m* is inserted through the slot *a* in which the picker stick moves, and it is seated in the shallow recess *o*. The bolt *M* is then inserted through a hole in the side of the lay and made to screw into the nut *m* by means of the screwdriver slot in its end at *g*. After this is done the bracket *D* is applied and the nut *n* screwed up tight.

When an old lay, constructed in the usual manner, is cracked or broken, as shown by the irregular line *x*, it may be repaired by using this device as indicated in that sketch.

Thread Waste at the Slasher.

EDITOR COTTON:

Replying to "Mack's" reply in the May issue of COTTON in connection with my letter on overcoming loose threads, it is possible that I did not understand the "flat threads" mentioned by him. Assuming that I did not, that does not alter the cases I wrote about. I said that his letter brought these experiences to mind, and related similar trouble or difficulty with loose threads and what I call "flats" on a plain weave, which is nothing more or less than two ends or threads sized together on the slashing, for want of being kept leased out single. When "Mack" thinks that the roll between the size box and the first slasher cylinder does not do any good on a plain weave, he is not taking the application of the lease roller seriously enough because it insures one-half of the threads being leased out just prior to taking to the cylinder for drying in addition to the lease rods on the front of the slasher.

"Mack" speaks of the trouble of threads going in from one sheet to another and making dressed doubles. This is not always caused by the extra lease rods in question; if so, it can be remedied either by making the surface speed of this extra rod faster, or making it slower than the surface speed of the yarn being dressed. I will not at this time give which way I have mine set; what I want is for "Mack" to try this out thoroughly and be convinced that this roller is of material benefit to the leasing of the yarn as it is being slashed.

"Mack" says further that covering this warper roller as described by me does not remedy poor spooling. I did not say that it would remedy poor spooling. I said that it was to take care of the different tension conditions that appear in the warper creels and anyone familiar with warpers knows what conditions there are in the creel without going into a lengthy discussion to show it, and those who haven't given the matter serious consideration can run their hands over the full beams that have been warped off and find there is a considerable amount of unevenness on the surface of the beams. This is caused by the threads not being wrapped on the beam with the same tension. This roller being covered with a flannel would cause friction on the loose threads and they would be wrapped on the beams tighter. If "Mack" has not tried this roll covered in the manner described, let him try it and then let us hear from him. This is the first roller that the yarn runs under from the spools in the creels.

I had my creels all leveled and lined, and set up as best I could—and I have a very competent overhauler—but still this did not do away with the varying tension conditions in the creels.

After doing what I did on the warpers and getting such good results from reducing the trouble in weaving, and the slack threads in the slashing, I noticed an excess amount of unevenness in the warper beams running out on the slashers, which caused extra thread waste. My notice of this particular defect in the irregular running out of the beams came directly from the meeting of the Textile Operating Executives of Georgia, held in Atlanta on March 13. I am glad to say that I had the pleasure of attending this meeting and the discussion came up concerning the irregularity of the warper beams running out, and at the other machines to which the warps go from the warpers.

I knew that mine were not running out evenly, but I tried to pacify myself by saying that they were about as good as I ever got and that there would always be some irregularity in the running out of the beams. But at the same time my conscience kept telling me to get busy and try to eliminate this useless waste, so I purchased some ball bearings for the measuring rolls and had them installed on the warpers. After a little difficulty we got them working, and now the thread waste on my warper beams is cut down fully 25 per cent—as a result of the meeting in Atlanta and the other work on the warpers that led me up to where I am now.

Yes, my beams are grey yarns.

A fellow never gets so keen in knowledge that he can detect and remedy all defects that he finds in the yarn; it

often occurs that he knows what is wrong, but has a heck of a time remeding the evil.

"Mack" says that in all of his positions as overseer that he has had charge of the warping, beaming and slashing. This I do not approve of; the spooling, warping and beaming should always be under the supervision of the overseer of spinning, and the overseer of weaving should have charge of the slasher, for a slasher, and the duties it has to perform, is to the loom as the picker is to the cards. Unless a man is a weaver he doesn't know how to size, and so many complications arise that the weaver must come and straighten out, for he is the one who knows. In my opinion, to get the best results, the slashers must be under the supervision of the overseer of weaving.

T. A. D. (Ga.)

A Little Talk on Fly Frames.

EDITOR COTTON:

I see in the April number that "Wash" comes back pretty strong at "K. S." and myself. It would seem that nearly everything we have said is, in his estimation, wrong. One would think that he was the instructor and we were the pupils. I admit that he may be able to teach me many things in the textile business, after all of my many years of experience in the carding department, for none of us knows it all, "Wash" included. But it seems there *are* writers for COTTON—and some very able ones—who do not agree with "Wash" in *everything*.

"Wash" gets around nearly all questions that are asked, in a way, but here is one which I asked some time ago that he has not answered yet: Why is it, if the roving is strained on all bobbin-lead frames, as he says it is, that if an operator stops a speeder and removes a little singling, which makes the bobbin of roving a trifle smaller in diameter, that the end will slack down every time that the traverse gets to where the single roving was removed, and many times the end will have to be broken back until another set is started? Isn't this pretty good proof that we are not *pulling* the roving all to pieces on the bobbin-lead frame?

If the carder regulates his tension all right, he will make good work.

I notice in the April number that "B. A. B." gives "Wash's" old love, the flyer-lead frame, a black eye, when he states that the system was found to have two defects: (1) that the bottom cone had its slowest speed when the bobbins were empty, and its greatest speed when full or filled. The bottom cone constantly and uniformly increasing the number of revolutions per minute between these two extremes. (2) The flyers started in advance of the bobbin, and by so doing, made a weak place in the roving.

If that is the case, why are these frames any better than the bobbin-lead frames? I believe that to have the bobbins revolving at their greatest speed when full is a bad defect, and I also think that the flyer would be apt to start ahead of the bobbins, and by so doing would strain the roving.

"Wash" says, in regard to my statement that the tight gear on the main shaft on a speeder, the one which meshes with the two gears inside of the sun wheel helps to drive the gears, "let 'K. C.' raise up the cone when the speeder is running and see how many ends this gear will save and let me know."

I can let him know without trying it. The ends would all go down. I have never claimed that this gear was the whole works, but I do claim that this gear works together with the cone belt in drawing the bobbins and you cannot get along without either one.

Now I would like to have "Wash" make this test: Let him loosen the setscrews in this tight compound gear on the main shaft and start the speeder up and see how many ends *he* will save, and let *me* know. "Wash" knows that he would not save his ends any more than I would if I raised up the cone or broke the cone belt.

Now if the cone belt drives the bobbins alone and unaided, as he says, how is it that the bobbin gears revolve when the cone is raised up, and the cone and belt are still? There must be some mysterious power somewhere, for they certainly revolve. Every carder must know that this tight compound gear turns the bobbin gears at a reduced speed when the cone is still. Now how is it that it has nothing to do with driving the bobbins when the cone is *running*?

"Wash" says, here is another thing. A man sizes his yarn and gets a sizing something like this—29.85, 28.01, 27.40, 31.06; this is supposed to be 28s yarn. A variation of 3.66 in the numbers and "Wash" blames it all to the stretch of the roving between the presser and the front roll on a fly frame. If some of the ends are stretched, why not all of them? They are all supposed to be running at the same tension. I suppose that when we get those speeders with a perfect tension that the numbers will all size alike, but I doubt it. There are *other things* that are just as vital in getting even roving. Opening and mixing of cotton is one of them.

How is one going to get even numbers if the cotton varies in length from a 1¼ to a 1-inch? It is impossible to mix this cotton so that each strand of roving will have an equal amount of long cotton; the strand which has the most long cotton in it will size heavy, while the strand which has the most short in it will size light, and there will be a great variation in the breaking strength of the yarn from an opening like this. All carders know that good cotton will work heavy, and poor cotton will work light. When the cotton is good a much lighter hank roving will give the same number of yarn, while on poor cotton the hank roving must be heavier to get the same number of yarn. A perfect tension on fly frames will not correct all of the evils in the carding department.

Here is another evil—

If one has bobbins of a different diameter—and you will find this evil in nearly all of the mills—some of the bobbins will vary nearly ⅛ of an inch in diameter, and starting a speeder after doffing the ends will run slack on the smaller bobbins while they will run tight on the larger ones. How is a carder going to have a perfect tension on a speeder where this evil exists? And in most cases the mill management won't allow the overseer to caliper the bobbins and throw out all bobbins which are not of a standard diameter. So you must start your speeder on the empty bobbins tight enough so the ends on the small bobbins will run and not slack down. And then the roving will be strained on the larger ones. How is "Wash" going to get around this and have a perfect tension on this truly

"The Finish Sells the Goods"

SLASHER OVERSEERS!

Do you know what Terpol Hydrate means to you?

IT INSURES

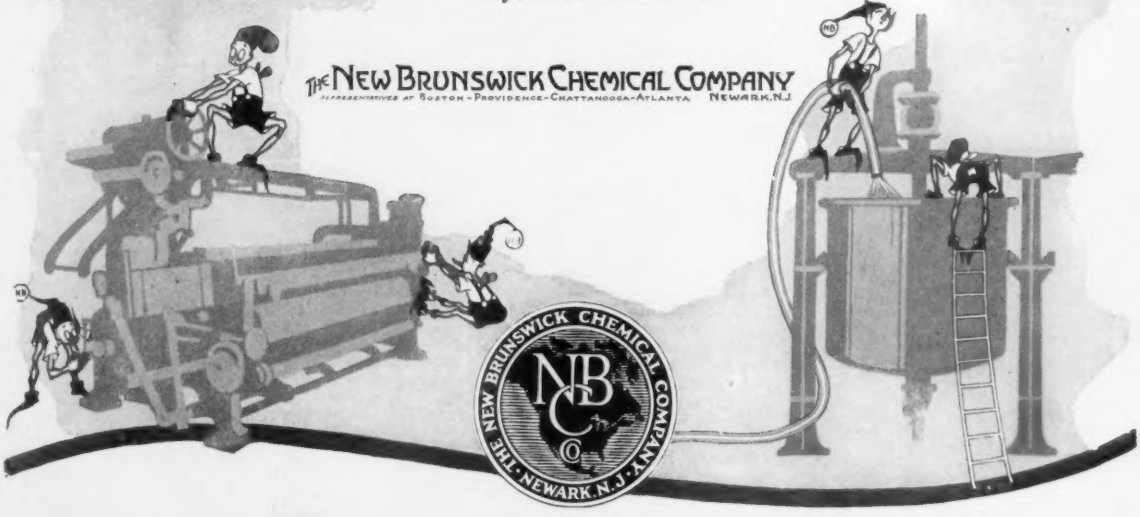
THIN BOILING SIZE	GREATER ELASTICITY
NO SHEDDING	STRONGER WARPS
LESS BREAKAGE	ROUND SMOOTH YARN
MOISTURE ATTRACTION	LESS HEDDLE TROUBLE

Let the En-Bees tell you how to use it!

BRUNZOL PRODUCTS

Size Assistants, Softeners,
Waterproofing Compound,
Waxes, Gum Substitutes,
Glycerine Substitutes, etc.

THE NEW BRUNSWICK CHEMICAL COMPANY
REPRESENTATIVES AT BOSTON - PROVIDENCE - CHATTANOOGA - ATLANTA NEWARK, N.J.



R&H CHEMICALS

COPPER SULPHATE

(Blue Vitriol or Blue Stone)

SODIUM SULPHIDE

(Broken Pieces, Fused and Crystals)

What Is a Reputation Worth?

It may be that he who has lost his reputation most appreciates it. Life is like that.

But it is also probably true that a Business House that has taken more than a generation of hard work to build itself up understands the true worth of its reputation.

R & H leadership is 40 years old. It has been stronger on every one of the 40 New Year Days.

And we believe that our customers have had the full benefit of the R & H reputation.

The ROESSLER & HASSLACHER CHEMICAL CO.

709 Sixth Ave., New York

41st YEAR

A PARTIAL LIST OF TEXTILE CHEMICALS FOR WHICH WE ARE HEADQUARTERS

Oxalic Acid 99%
Albone (25 volume Hydrogen Peroxide)
Alumina Sulphate, 17/18% Iron Free, Powd. Lump
Antimony Salts 65%
Bleaching Powder (Chloride of Lime)
Epsom Salts (Magnesium Sulphate)
Blue Stone (Copper Sulphate)
Glauber's Salt
Formic Acid 90%
Formaldehyde, U. S. P.
Bichromate of Potash
Carbonate of Potash (all grades)
Caustic Potash 88/92%
Permanganate of Potash
Chlorate of Potash
Yellow Prussiate Potash
Caustic Soda
Sodium Acetate
Bichromate of Soda
Bisulphite of Soda (white powder)
Solozone
Sodium Sulphide (60/62% Broken Pieces and Fused)
Sodium Sulphide Crystal 30/32%
Tri Sodium Phosphate
Sal Ammoniac 99%
Zinc Dust
Yellow Prussiate of Soda
Chlorate of Soda
Nitrite of Soda
Chrome Alum
Barium Chloride

cone driven speeder which he speaks about in the April number of COTTON, unless the mills scrap millions of bobbins, and the price of bobbins is pretty high just now?

"Wash" states that we should have different cones for different speeds and different hank rovings. He claims that the speeders should run at just the speed for which they are figured. Now, all over the country speeders are being run at different speeds and on different hank roving, and are making good work with the same cones.

What in Sam Hill is a carder going to do if he is making an 8 hank roving and the superintendent comes in and tells him to change onto 10 or 12 hank, if it is *absolutely* necessary to change the cones, or if he must change the cones every time he speeds up or slows down a speeder?

For the last week or two I have been busy starting up a pair of Saco-Lowell speeders, 6 x 2½, on 10 hank roving, and I thought of "Wash's" statements several times about changing the cones for different speeds and different hank rovings.

Now the figured or catalog speed for these speeders is 1613 r. p. m. for the spindles. I am running them at about 1400 r. p. m. and they are going fine. The tension is good from the beginning of the set until full and I don't think that the roving is strained, either, and I can't see that it is necessary to change the cones. "Wash's" statement that changing the bottom cone gear changes its speed is right in some cases but not so in all cases. For instance, immediately after doffing a speeder, the ends are running too loose. Now the belt is not slipping and the cone belt is on the small end of the bottom cone as far as you can get it. You put on a tooth larger bottom cone gear to increase the speed of the bobbin gears, but you do *not* increase the revolutions of the bottom cone. The speed of the bottom cone is increased only when you move the rack towards the small end of the cone, and the speed is decreased when you move the rack towards the large end of the cone—there is no chance for an argument here.

"Wash" says look up the production turned off per spindle by the old Lowell and Brown fly frames, which were flyer-lead, and "you will find that our up-to-date fly frames do not come anywhere near their production." That may be so, but I would have to see it done before I would believe it. I have some Providence jack speeders, 6 x 2½, and the spindles are making 1635 r. p. m. I think the production per spindle on these speeders will come pretty near to what "Wash" claims for the old Lowell and Brown flyer-lead frames. What I don't seem to understand is why such speeders were scrapped if they would turn off a greater production and a better quality. It seems strange that no one saw the mistake before it was too late.

Now, before closing this little talk on fly frames, I want to ask a few questions; maybe "Wash" can help us all out on these troubles.

How are you going to have a perfect tension on a speeder if the bobbins are of different diameters? And how are you going to have a perfect tension if the work fed is very uneven? Won't the heavy strands contract more from the twist taken and make the ends run tight; besides, such bobbins will increase in diameter faster than the light ones, will they not, making the heavy ends still tighter? And won't the light strands run loose due to the less contraction from twist taken and thus increase in diameter more slowly?

I have seen overseers of carding bawl out speeder hands for tightening their ends, when I don't think that the overseer could have run a set of roving full himself without doing the same thing—and uneven work was the cause of the trouble. No speeder will run with an even tension on all ends if the work fed is very uneven.

I remember a number of years ago, when I was a card grinder that a young man, a friend of mine, took a second hand's job in this room. The speeders were making soft roving. When a set was doffed, some of the bobbins of roving would be all right, while others would be so soft and run over that they would have to be cut off. And this second hand thought the trouble was in the speeders and put in a lot of time trying to find out what was the matter with them. He used to say to me, "I would give a good deal to know what is the matter with them." But I could not help him out at that time, but now I know it was uneven work that was causing the trouble. The light strands did not receive enough twist to build a good bobbin while the heavy strands were all right. One could look around the room and see operatives here and there tightening their ends, due to this uneven work, and the overseer would bawl them out for doing so when it was no fault of the operatives or the speeders either.

How could "Wash" operate a truly perfect tension speeder under these conditions?

K. C. (Conn.)

Cards and Carding.

EDITOR COTTON:

Having read the letter from "Benjamin" in the August number on cotton cards, I would like to submit one myself on this subject, although there is no adverse criticism to make on "Benjamin's" remarks. What I am writing is especially intended for beginners that they may be started right.

The lap of cotton as it leaves the pickers consists of cotton fibers crossed in all directions, together with a small amount of foreign matter consisting more especially of lighter impurities such as pieces of leaf, seed, or stalk, and thin membranes from the cotton boll. Such material is of too light a nature to be removed by the action of the beaters or to drop through between the grids or inclined cleaning bars of the pickers so that it is carried forward with the cotton and into the lap.

In order to remove this foreign matter, machinery of an entirely different character from the cleaning machinery previously used must be adopted, and for this purpose the cotton card is employed, the process being known as carding. Carding is regarded by many manufacturers as one of the most important processes in cotton yarn preparation. In addition to cleaning the cotton it is also the first step in the series of attenuating processes which gradually reduce the weight of cotton per unit of length sufficiently to form a thread.

The lap of cotton from the picker is comparatively heavy and must be reduced considerably in weight at various machines in order to give the weight per unit of length required in the yarn. The carding process is the one that follows the picking operations in all cotton mills,

MANUFACTURERS OF

Direct Cotton Colors

Aeroplane View of Central Dyestuff & Chemical Co. Plant.

CENTRAL DYESTUFF & CHEMICAL CO.

Main Office and Works, Newark, N. J.

Established 1898

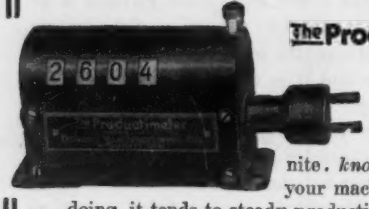
You!
The
Worker!
The
Loom!

You can't *know* how you stand unless you *know* how the worker and the loom stand.

You *can* know how you stand by checking up on the worker and his loom.

You *should* know how your operators and machines are working and you *will* know if you fit your machines with

The Productimeter



Aside from the fact that it gives you quick, definite, *knowledge* of what your machine and men are doing, it tends to steady production by making the operators more interested and energetic. Remember: Interested operation means volume.

Tell us what kind of machine you would like to check up on and we'll send you the right Productimeter for thirty days free trial.

DURANT *Manufacturing Company*

633 Buffum Street, Milwaukee, Wis.

(1098)

Fresh Air Every 20 Minutes

Interior View.

The Famous

"DIXIE" VENTILATOR

The operation of the "Dixie" is automatic and continuous. Every 20 minutes there is a complete inflow of pure fresh air and a complete elimination of foul air. This goes on constantly, day and night, year after year, without attention or repairs ever necessary because the "Dixie" is built to last with nothing to get loose or get out of order, nothing to break regardless of severest wind and weather.

The "Dixie" Ventilator enjoys a National reputation and was selected by the Government for installation on Army, Navy and Post Office Buildings.

Made in sizes suitable for any size and type of building. Easily installed.

It's the ideal ventilator for mills, churches, schools and buildings of all kinds.

Write for prices and full information.

Bowman-Dozier Mfg. Co.

Manufacturers—Contractors—Sheet Metal Products

ATLANTA, GA., U. S. A.

whether coarse or fine and whether making carded or combed yarns.

The objects of carding are (1) the disentangling of the cotton fibers or the separation of the bunches or tufts of fiber into individual fibers and the commencement of their parallelization; (2) the removal of the smaller and lighter impurities; (3) changing the formation of cotton from a lap into a sliver accompanied by the reduction of the weight per yard of the material. A sliver is a round, loose strand of cotton without or almost without twist, and usually from 40 to 80 grains per yard in weight. It is generally coiled in a can and is made at the carding, drawing and combing processes.

In order to arrive at the previously mentioned objects, the principle of combing the fibers between sets of closely arranged wire teeth is adopted. One set may be fixed and the other moving, or each set may be moving in opposite directions, or both may move in the same direction but at different speeds. In any case the sets of wire teeth are in close proximity to one another. The first and second objects—the disentangling of the cotton fibers and the removal of the impurities—are attained by this means, as the fibers forming the small tufts are drawn apart and the lighter impurities are caught between the wires where they remain until removed by a special means.

Use is also made of the centrifugal force of a cylinder covered with wire teeth and revolving at a high speed, in attaining the first and second objects of carding. The ends of the fibers are thrown against stationary or moving points of wire and the fibers thus combed out, while heavier impurities such as sand, dirt and dust are thrown out owing to the high speed of the cylinder. Another method of arriving at the second object is that of arranging knives or bars partly around the revolving portions of the card to clean and throw off dirt, sand and dust from the fibers as they are drawn past such obstructions.

The third object is obtained by adopting the principle of drafting, the attenuation of the material being produced by revolving cylinders covered with wire teeth instead of by the usual method of rolls which are used in this machine only at the feed and delivery. Carding is really a combing or brushing action, the fibers being operated on by a series of wire teeth which have the same effect as loosely holding a few fibers at a time and striking them with a comb. The process, however, must not be confused with that technically known as combing, which is an entirely separate process and used only in the manufacture of fine yarns.

The machine employed in carding is usually spoken of as a card or sometimes as a carding engine, this latter name however is used more commonly in England than in the United States. The card that is most commonly used and now almost universally adopted for new cotton mills is known as the revolving top flat card, sometimes spoken of as the revolving flat card or the English card. At the back of the card is the lap as it comes from the picker, resting upon a roll known as the lap roll, which is constructed of wood and is either fluted or has a rough surface sometimes gained by covering with a coat of paint mixed with sand in order to cause the lap to unroll by friction and without slipping.

The cotton is drawn over the feed plate by the feed roll, the single layer or sheet leaving the lap at the lap roll. As it passes from the lap roll to the feed roll each outer edge of the sheet comes in contact with a lap guide, a wedge-shaped piece of metal bolted on the inside of the feed plate. This guide turns up the edges of the sheet of lap to a small extent, making it slightly narrower as it approaches the feed roll; this tends to prevent the outer edge of the cotton from spreading and producing a ragged edge. The feed plate extends under the feed roll with its nose projecting upwards in front of the feed roll almost to the teeth on the circumference of the licker-in.

This feed roll, which revolves in the same direction as the licker-in, is fluted longitudinally and is sufficiently large in diameter to resist any tendency to spring or bend when a thick place in the cotton passes beneath it. Its ends rest in slides and it is weighted at each end by means of weight on a lever that has as a fulcrum a lug on the feed plate. The lever has a bearing on a bushing on the feed roll and thus produces the pressure of the feed roll on the sheet of cotton on the feed plate, the extent of which may be regulated by moving the weight along the lever. If the pressure is too light the action of the licker-in will pull the cotton from the feed roll before it should be delivered. This is known as plucking and results in the cotton being taken by the licker-in in large and tangled flakes that have not been opened, thus causing uneven work and requiring the finer parts of the card to perform the heavy work which should be done by the licker-in.

Above the feed roll rests a small iron rod that is revolving by frictional contact with the roll, and since it is covered with flannel, collects any fiber or dirt that may be carried upwards over the surface of the feed roll and thus acts as a clearer. It also serves to prevent any air current from passing between the feed roll and the licker-in cover.

The lap roll is positively geared with the feed roll in such a manner that the feed roll takes up exactly the same amount of cotton delivered by the lap roll without any strain or sagging, and as it revolves, carries this cotton over the nose of the feed plate so that a fringe is brought under the action of the licker-in. The upper edge of the nose of the feed plate is rounded so as not to damage the cotton resting on it and pressed against it by the action of the licker-in. The important difference in various feed plates is in the distance from the bite of the feed roll to the lower end of the feed plate. By regulating this distance in accordance with the length of staple being worked the entire length of the staple is so supported that it receives the full benefit of the cleaning and disentangling action of the licker-in, which reduces the work on the finer parts of the card.

The distance between the bite of the feed roll and the lower edge of the face of the feed plate should be from 1-16 to 1-8 of an inch longer than the average length of the cotton being worked, as it is necessary that the fibers should be free from the bite of the feed roll before the action of the teeth of the licker-in exerts its greatest pull, which is at the lower edge of the plate. Otherwise the fibers would be broken. A long nose or faced feed plate is suitable for Sea Island and Egyptian cotton, while the shorter nosed one is suitable for short staple such as is grown in India and China.

In a later letter I will continue the thread of this carding discussion, following the cotton on its journey through this process.

Bab. (N. C.)

The Function of the Job Analysis

BY ERNEST C. GOULD.

Much has been said and written in regard to securing better industrial relations. Many elaborate welfare schemes have been advanced as the means of obtaining this result. But it seems to me, looking at it from my own experiences as a common laborer as well as from my investigations as a personnel director, that better progress can be made if managers will pay more attention to their setting of the proper job requirements and labor standards.

The job is the keynote of the whole structure of industrial relations. It is the one common meeting ground from which the demands of both the employer and the employee arise. The employer must offer the job and the man must accept it before any other relations begin. Where employees like their jobs, the employer has few labor problems to consider. But when employees are dissatisfied with their jobs, then the employer finds a legion of labor troubles arising. Sometimes the good jobs are profitable to the employer but sometimes they are not. It all depends on what he gets in return for the wages he pays. Every job requires three things, namely; equipment, materials and labor, both mental and physical. The management must furnish a formula for the combination of these ingredients. The quantity, the cost, and the time necessary to turn out the product are in a large measure controllable by the management. Labor is the greatest variable with which it has to deal. The job layout and the extent of the task is of prime importance.

In many cases, the jobs are determined by custom. The standards for new jobs are set by copying from someone else without careful analysis of local conditions. Employees as well as employers get their notions as to the amount of work and the duties of a job from the usual requirements of the trade. Custom is the accepted standard. But conditions vary in different locations and standards which fit one place are often too high or too low for another. Consideration of customs must often be taken into account, but more weight should be given to actual conditions. Things should not be taken for granted but a careful analysis should be made to determine the requirements.

In the performance of a job, the factors of time, skill and fatigue are present. Human effort produces fatigue. Its extent is partly determined by the length of time the efforts consume and the degree of skill which assists the efforts. For example, take two men at the task of shoveling coal. The man who is accustomed to this work, or in other words possesses skill at it, can shovel longer without stopping to rest than can the one who is not used to the work. Due consideration must be given to these factors in setting job requirements. Time plays a very important part in setting any ordinary task. The following illustration shows how important is the consideration that must be given to this element in fixing machine tending requirements.

A cotton mill, wishing to start up a new carding department, which contained 174 cards, wanted to know how many machine tenders it would require. Analysis of the work showed that six machines would be stopped each day for grinding. That left 168 machines to be figured on for daily production. In making the following analysis, the hand operation times cover an allowance of about 20 per cent for rest, etc. As all cleaning and oiling was done at regular periods when the power was off, no time allowance for this was considered. The laps lasted seven hours and fifteen minutes. For a full week of 48 hours each machine would require seven laps. It was found that five minutes was ample time to do all the work necessary to replace a lap. The machine filled a can of sliver in two hours and twenty minutes or a total of 21 cans to be filled in a week. The operative could easily do all the work connected with doffing the machine in three minutes.

Having obtained these items it was an easy matter to arrive at the answer. This is how it was worked out: 5 minutes per lap, 7 laps per week = 35 minutes per week per machine or 6480 minutes for 168 machines operating at 100 per cent; 3 minutes to doff, 21 doffs per week = 63 minutes per week per machine or 10,548 minutes for 168 machines; total labor time, 6,480 + 10,584 = 17,064 minutes for 48 hours; 17,064 ÷ 168 = 98 minutes per week to tend one machine; 48 hours = 2,880 minutes divided by 98 = 29 or the number of machines one operative could tend in 48 hours; 174 machines divided by 29 = 6 or the number of operatives neeeded.

Where the job analyst is considering the factor of time, he should find a standard time for the cycle or set of operations. Such a unit can be used as a measuring stick for determining help and production standards. The chief thing to be kept in mind in arriving at these standard times is to make a reasonable allowance for rest and relaxation. The nature of the work and the general character of the help determine the extent of this allowance. Having obtained this standard of what a day's work is, the management should not hesitate to guarantee its use as long as the job remains the same. Workers appreciate definite standards. If an employee should do better than the standard-then that is something for him to be proud of and something for the employer to recognize and reward. Definite job standards make supervision easy and discourage shirking.

Methods of doing a job are vital and deserve a great deal of consideration. Methods have a lot to do with the time, the fatigue allowance, the quality, and the amount of waste. Methods reflect upon the cost of production. The job analysis is the first step toward finding ideal methods and adopting a standard practice. Sequence of operations where there is a choice, methods of treating and handling the materials, the physical motions necessary to perform the operations, all must be considered. The deciding factor in arriving at a choice of methods is the net result that can be obtained in the cost of the operation. Hence, time, effort, materials, repairs, and other expense must be weighed.

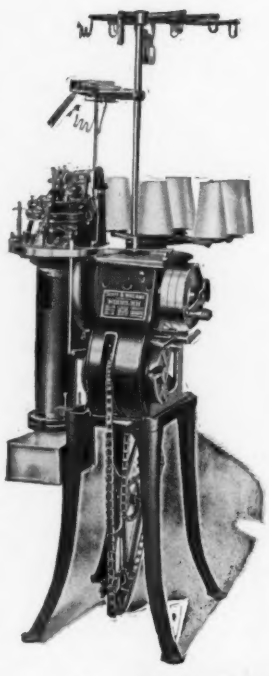
Aside from furnishing data for establishing production and cost standards, the job analysis enables the management to determine equipment and material standards together with personnel requirements. The chemist, statisti-

(*Continued on page* 812.)

KNITTING SECTION

NEW MODEL H-H

Producing Ribbed Top Half Hose Complete



Ribbed top made on two sets of needles.
Automatic transfer from ribbed stitch to plain.
Eliminating necessity of skilled help.
Saving of raveling waste which occurs when topped by hand.
Each stocking is dropped from the machine when finished.
Each stocking is automatically started upon the empty needles, producing a French welt without drawing thread or cutting, no ends of any kind to be removed.
Machine is fitted with five yarn fingers.
Provision is made for high spliced heel and double sole.
Provision is made for ring top and ring toe.
Speed of machine about the same as Model K.
Production about twelve stockings per hour on 3¾" 220 needles.
One operator can take care of the same number of machines as Model K.
The machine is built in all gauges.

ESTABLISHED 1865

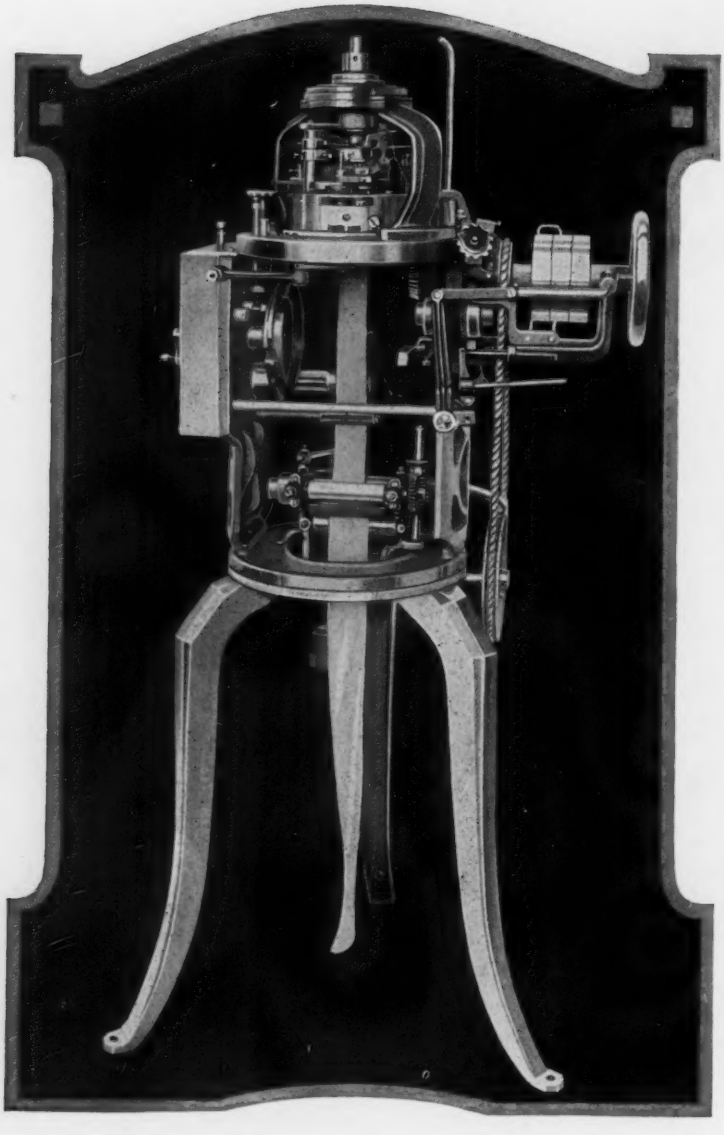
SCOTT & WILLIAMS

INCORPORATED

366 Broadway **New York**

Hamilton, Ont.
Main and McNab Streets

High Point, N. C.
401 Wachovia Building.



WILDMAN
THE WORLD'S STANDARD

The Wildman Ribbing Machine

Wildman Circular Ribbers, with the new style Two-Speed Drive, permit use of one speed for difficult ribbing and another speed over 50% greater for plain work.

With the ordinary one-speed drive, the same speed must be maintained on plain work as on difficult stitches, a speed too slow on plain work for greatest production.

The Wildman Circular Ribber offers the additional advantages of accurate, interchangeable parts, properly fitted into an exceptionally strong frame. These features assure superior knitting qualities and uniformly high production.

On request we will send the "Wildman Ribber Catalogue" giving detailed illustrations and descriptions of every important part of the machine.

We have issued a very complete and informative book, "The Science of Knitting"—Price $3.00.

TRADE MFG MARK

WILDMAN MFG. CO.
NORRISTOWN, PA.

British Textile Progress in Knit Goods

BY WILLIAM DAVIS, M. A.

The past year or so has been full of very definite developments in regard to all that concerns the production and marketing of knit goods in the United Kingdom and it is said that this branch of the textile industry is more active and promising of further growth than any other. An interesting indication of the orientation of demand in knitted productions is the type of machines which are being ordered and in this respect an outstanding feature of the past year has been the abnormal demand for the ordinary plain knitting machines. All the makers of those machines in this country and the Continent have been "pulled out of place" for deliveries, as the saying is, and the demand of the public for their products is constantly on the increase. It is also remarkable that those machines are not going into the large centers of hosiery manufacture so much as into places where the industry is conducted on a smaller scale, but the rapid multiplication of such smaller manufacturers all over the country is making its weight more and more felt in the markets.

In this respect there is a marked revulsion of feeling for the power flat knitting machine which at first sight may be interpreted as a retrograde step such as an industry should never take. The matter of waste has of late come into greater prominence and systems of manufacture which involve considerable waste have to be carefully re-considered in the light of modern conditions. Most of those fabrics are in fancy tuck stitches in several fancy colors and when they are made on a machine with several divisions, one or another of these is always making holes, and as the machine continues its progress, these pieces have to be treated as waste.

The big demand for flat knitting machines is due to the call of the market for fancy articles to be made into costumes, knitted coats, jumpers, and latterly there has been a great boom in garments for infants and juvenile wear which are now worked, for the most part, in the knitted stitch. The garments for adult wear are mostly full fashioned on the machine and although this is apparently a tedious operation as performed by hand it should be kept in mind that most of such articles are made in coarse stitch, comparatively, so that relatively fewer fashionings are required to give the shape. In the case of infants' garments, the machine adapts itself to frequent changes and machines of smaller widths can be used or the width of a large machine reduced by the use of the stops by which means the traverse is shortened and a greater speed attained. The outstanding advantage of this in fancy stitch patterns is that the worker is at once cognizant of any obstruction in the machine and can immediately stop to correct this before the fabric is thrown from the needles.

For full length knitted costumes the machine is very well adapted because it can produce narrow width stitch in rib for the waist and give fuller stitches for the bust and skirt. Great progress is being made in producing all kinds of double cloths on the flat knitting machine by means of needles having two sizes of butts and two perfectly knitted fabrics can be shown stitched together after the manner of a stitched double cloth woven; the same idea can also be adapted for reversing the functions of the two fabrics in regard to color and double cloth reversible figures are thereby produced.

Web Producing Machines.

Very important changes and developments are in progress in regard to machines for producing knitted web, this being particularly the case in regard to the better quality of web produced so as to give an excellent cover in the cloth, with absolutely regular wale and course. Up to the war the German "Terrot" machine was largely employed for this branch as giving a quality of stitch immensely superior to the ordinary latch needle production. Combined with this the machine had a great capacity for making fancy fabrics, but as the latter feature has recently not been so much required, attention has been rather given to the production of fabrics plain in character.

The great merit of this plain fabric appears to be largely due to the machine's being provided with the spring needle and American machine builders have been successful in evolving a machine which gives equal results to the "Terrot" machine with the great advantage of increased production. This machine has been imported to this side in extremely fine gauges which are in great demand for fabrics for which a high price is asked and given. These machines are being introduced in considerable numbers, the demand being in excess of the ability to deliver and it bids fair to become a standard and regular part of our equipment in the near future.

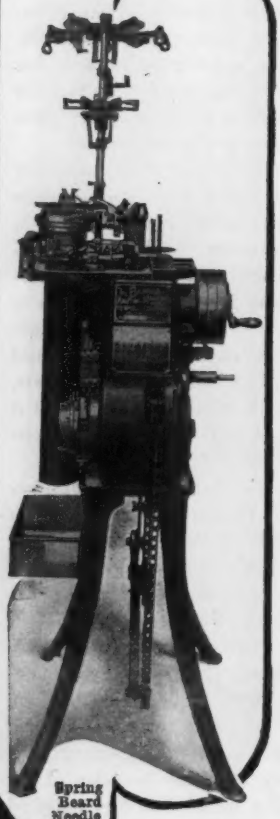
Several English machine builders are having considerable success in making machines fitted to give the tuck stitch by the use of high and low butt needles and these are experiencing a lively demand on both sides of the Atlantic. They employ the latch needle and provision is made for a wide range of patterns by the use of these needles inserted in the machine cylinder according to the pattern required. They are used largely for the more fancy and lighter fabrics for summer wear and worked in heavier yarns are well suited for winter use. The same principle is being employed to give vertical-striped effects and these are having a run of great popularity for many branches of the jersey and sweater trade. The machine is also supplied with a ribber dial by means of which the thickness of the fabric is considerably increased as well as the elasticity, the latter property making it more easy to fit the wearer as there is greater latitude in regard to size, there being a range within which the fabric will stretch to the shape of the body. Many of these machines are being built in coarser gauges about 5 to 10 needles per inch for the winter trade in woolen yarns. They are also being largely employed for the artificial silk trade in gauges about 18 needles per inch, these fabrics having practically dominated the shirt blouse trade during the past two seasons.

Hosiery.

The popularity of the full-fashioned hose remains unabated and the public are showing increasing skill in recognizing the signs of an article made by the full-fashioned

The Banner

Full Automatic Hosiery Machines



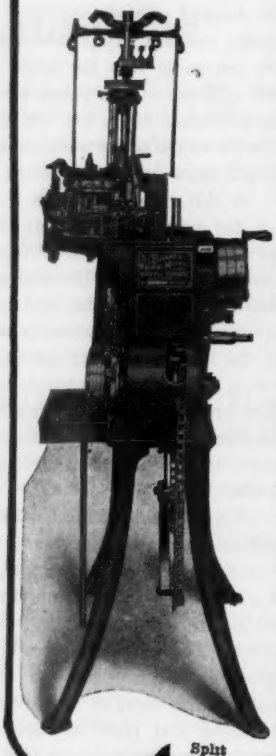
Spring Beard Needle Machine

Simplicity
Quality
Speed
Production

All Parts Accessible from the Front of Machine

We have just placed on the Market two new models– The Spring Beard Needle, built in sizes of 3" to 3 3-4" diameter, and a new model –Split Foot Machine, built in sizes of 3 1-4" and 3 1-2" diameter.

Write for descriptive catalog



Split Foot Machine

HEMPHILL COMPANY

MAIN OFFICE AND FACTORY PAWTUCKET RHODE ISLAND

TRADE MARK

SOUTHERN OFFICE and SHOW ROOMS
912 James Bldg.
CHATTANOOGA, TENN.

PHILADELPHIA OFFICE and SHOW ROOMS
208-9-10 COLONIAL TRUST BLDG.
PHILADELPHIA, PA.

system on Cotton's Patent frame. With unerring instinct they turn to the back of the leg to see the fashioning marks and examine the heel to note whether it is square shaped or not. This branch of the footwear trade is always well-employed and the fine gauge hose in Cashmere for winter wear and artificial and real silk for summer wear are staples in constant demand. This trade is also being catered for in imitation fashionings shown on imported machines where the shape of the leg is reduced towards the ankle apparently produced by narrowing, these marks being imitated quite cleverly by the making of open stitches at regular intervals.

There is, however, some dissatisfaction at the kind of heel produced on the ordinary automatic circular hose machine as the complaint of certain wearers is that it is too small to accommodate the heel properly except in the case of very slender varieties. If the heel is large and fleshy, the material has to stretch and is thereby attenuated and the elasticity taken out of it to the detriment of wearing power. The roomy heel as made on the full-fashioned system gives comfort and excellent service in wear.

Several British machine builders have been very successful in developing machines for producing vertical embroidered hose. This does not refer to the pantograph machine brought out some considerable time ago by a sewing machine firm and which for some unexplained reason has not been extensively adopted on this side. The machines in question have a second cylinder arranged above the ordinary cylinder of the circular hose machine so that extra fingers can be inserted at intervals according to pattern, these being provided with fancy embroidery threads from bobbins on a platform. They are made to work between the needles laying their threads over them according to pattern, and the machine builders have, during the past eighteen months, further developed these machines to give a much wider range of patterns. For a long time solid stripes, zig-zag effects, and simple intermittent effects proved the full range, but owing to new attachments, diamond designs and others of greater complexity can be produced which has all tended to the glorification of the sock for the male. Recently the whisper has gone round that the trouser bottoms have no longer to be turned up and if this be true it may prove a detriment to this particular branch of trade.

Ribbed Hosiery.

There has been an un-interrupted run on ribbed socks and stockings which is in part due to the articles worn at the British royal weddings last year when hosiery manufacturers in the Midlands presented articles in the famous 6 and 3 Derby rib stitch. This has had a wide popularity made on the Cotton's patent rib frame and the vogue has spread to America, also, for large weights of these goods have been exported. Ribbed articles are also made on the circular machine as built and perfected largely in Leicester.

During the war American soldiers engaged in the hosiery trade in normal times spent their leave in Britain and found their way to the maker of those machines in Leicester. As a result increasing numbers of those machines for producing ribbed socks and stockings are being exported to the States so that these articles are likely to bulk more largely in the American markets of the future. They can be adapted to give a great range of different rib stitches along with interesting shot effects in color so that the scope of hosiery is considerably increased by the products of this machine.

This type has been successfully adapted to the trade in plain hosiery where rib tops are required. At present for this extensive and important branch of the trade, the ribbed portions are made on the rib machine and afterwards transferred to the plain machine for the addition of the leg and foot. This process involves two machines, and the running-on of the ribs being done by young workers is often performed slovenly and flaws often occur where the rib joins the leg of the hose. This join is sometimes tighter in tension than the other part of the leg and the article bursts along this line. In this new machine the ribbed portion is made on the same machine as the plain leg and foot by double headed needles which are drawn into the top cylinder to produce ribbed work and brought back again to the bottom cylinder for plain work. Such rib tops are absolutely homogeneous at the join and are also more elastic than is the case with rib tops which are run on in the usual manner. The machines have now been thoroughly tested in the factory for three years under hard working conditions and are proving entirely satisfactory.

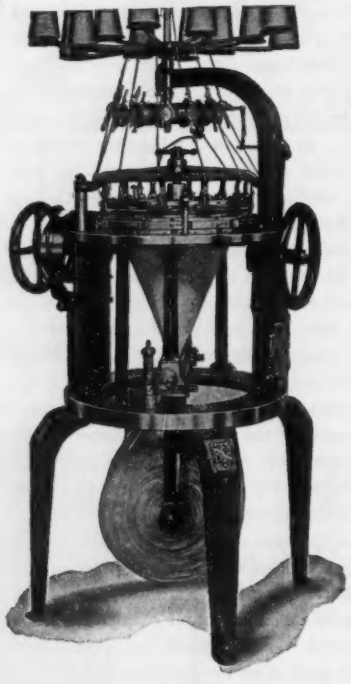
The American Scott & Williams machine now being introduced for making the inverted V-shaped splicing at the heel is proving a great attraction. The splicing at present performed, particularly the high splicing, stands high up the heel and in its square form appears as a kind of blemish, particularly in the case of dress hose which are donned for the ball and entertainment. Now the splicing can be introduced so that it is at its fullest width at the heel but gradually tapers off to a point at the highest part; this gives an inverted V-shape which is meeting with a quick demand on the part of an appreciative public.

The same basic reasons account for the large use of hosiery made with the French heel and foot where there is a seam along the center of the foot. This is a disadvantage in regard to comfort but the customer often elects to endure discomfort rather than have the pattern interrupted abruptly at the side of the foot as has to be done by the English system of making the article. When the foot is made in one piece and folded over the foot the pattern of the hose can be continued right round, so that if the slipper comes off the continuity of the hose is not broken to the view. These are very small and apparently unimportant matters but they have a great influence on the course of trade and the enterprising manufacturer who is out to secure the business takes careful note of every whim.

Export Trade.

Britain is a large exporter of knitted goods and the fortunes of the branch are rather fluctuating in these times of upheaval and constantly recurring crises. The trade with Scandinavian countries is being sedulously cultivated and close study made of the requirements of the markets. Attention to these matters has shown that the sizes and dimensions of garments intended to be worn there are on a larger scale than is customary in Britain and not such a wide diversity of sizes is required. Provision has to be made for the greater body width of the average Scandinavian; he has not much use for the finest gauge textures, being difficult to convince that warmth can be obtained without weight.

Trade with the Colonies is being adversely affected by



PRECISION

Successful knitting depends on accurately cut Cylinders and Dials.

For many years we have been equipped with special dividing heads from which we have manufactured Index Plates unsurpassed for accuracy.

The Cylinders and Dials resulting from such superior methods are then hardened and scientifically tested.

This careful procedure guarantees a precision and durability resulting in the consistent production of faultless ever fabric.

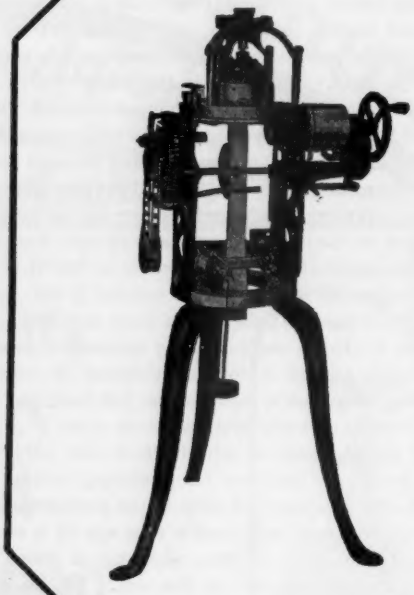
TRUMP BROS. MACHINE CO.

Successors to

NYE & TREDICK CO.

WILMINGTON, DELAWARE

Cable Address—Trumpbro—Wilmington
Southern Agent—H. F. Booth, Cheraw, S. C.



BRINTON RIBBERS

possess all modern improvements, including selvage welt, French welt, double knee dogless and striping attachments, with automatic stop motions.

Built in all sizes, for all classes of rib work.

We also build hosiery knitters and Body machines for underwear and various other circular machines for all kinds of knitted articles.

Samples and prices on request.

H. BRINTON COMPANY

Kensington Ave. & "M" Street
Philadelphia Pennsylvania

their determination to start factories of their own. Several years ago what were thought to be grandiose schemes for doing their own spinning were introduced in Australia and astonishing success has been achieved with the aid of spinners and managers drawn out to start these businesses. There has been during the past two years similar activity in regard to developing the knitting industry in Australia and New Zealand and large quantities of the latest machines have been sent out to equip new factories.

In the choice of such machines, preference is given to the more simply constructed types which have a minimum of parts to go wrong, because if repairs are required skilled men to effect these are scarce. This trouble occurs frequently and large plants have in some instances had to wait the arrival of an expert mechanic from the old country before they could be set in motion again. Now machine builders who receive orders for such machinery are generally asked to recommend a skilled mechanic to go out with them and keep in repair.

Considerable numbers of knitting machines of all classes are finding their way to Continental countries and the annual exhibition at Brussels has proved a useful means of getting into touch with customers from all parts. The German machine builders being handicapped considerably at present, the market for certain classes is free and the French makers are reported to be doing rather well with a number of their specialties. Many machines employed in the British industry for finishing are imported and there is a great field for improvement in many of the methods and apparatus at present in vogue in many concerns. American finishing machinery has a very important place in the equipment of an up-to-date factory on this side.

Progress in Finishing.

The great amount of experimental work being done in finishing knitted goods has led to very important results, and fabrics of great diversity are being obtained from the product of the ordinary plain knitting machine. Up to the present the chief development has taken place in adapting the fabric to the requirements of outer wear. The most successful results have been obtained in the fine gauges in pure wool or worsted spun yarns and with suitable routine of finishing in which milling forms an important part, fabrics can be obtained with a firmness and rigidity at the maximum rendering the articles quite suitable for most purposes of outer wear. Not much progress has been made in the direction of cotton goods, because, in most cases, it requires milling to produce the denseness required. Many brands of suitings, overcoatings and ordinary suitings are finding their way on the market and after two years of trial are reported to be giving wonderful satisfaction.

During the past winter season there has been a recrudescence of demand for imitation astrachan and fur effects as these have been largely in request for trimmings and ornamental features on clothing. They are made on the English loop-wheel circular frame where the curly element is composed of thick mohair or alpaca yarn in course counts. This is usually too thick to take its place on the needles at every stitch in the ordinary way and a second thread is employed for the ground with a third thread to bind the thicker luster thread to this ground. This style of manufacture is being adapted to making fabrics with a long pile similar to what is obtained in complicated pile weaving.

An active campaign is being conducted with the object of popularizing the knitted fabric against which there is at present a kind of prejudice in certain sections of the outer garment trade. When these new cloths come to be more generally known and appreciated, along with their lower cost of production, a great development in the industry is certain to result. These cloth fabrics are found very suitable for draping and hanging garments and also for the softer flowing fabrics required in export trade to the East.

It can be said that at no time in history were the British hosiery manufacturers more fully alive to the opportunities of the present than they are now, a new spirit of alertness prevails and this is shown by their growing appreciation of technical education in regard to their industry. In the large hosiery centers important schools have been established under full-time staffs of teachers and students are allowed to attend during working hours at certain periods during the week so that opportunity is given for the individual instruction of the student when the mind is alert and eager. This has proved to be very beneficial in practice as compared with the night school when students came to their task already tired with the work of the day.

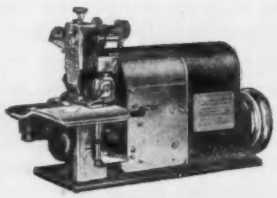
A number of firms make a practice of encouraging their young men by offering them promotion on the results of their success at these day classes and this is bringing a new spirit of alertness and keenness which is having its effect in the general uplift of the industry.

Various sections of the textile industry on this side have established Research Associations during the past five years, these having been supported by the State to the extent of 50 per cent of the expenses while the remaining 50 per cent has been found by subscriptions from individual firms or by a levy on the trade association. The largest association research laboratory is established at Manchester in connection with the cotton trade, another in connection with the woolen industry has its seat at Leeds, and they are both in the position of having their premises fully fitted up and work is proceeding on the various problems of interest to the industry.

The B. F. Sturtevant Company, with headquarters and main plant at Hyde Park, Boston, Mass., have purchased the plant of the Wisconsin Engine Company, at Corliss, Wisconsin, and will equip it as a manufacturing unit to fill a long-felt need on their part of a manufacturing plant in the middle west. This step should enable the company to render more prompt and intimate attention to the installations of their equipment in that setion as practically every installation calls for specific engineering. The new acquisition of property covers nearly ten acres and the buildings have approximately 150,000 feet of floor space. A full manufacturing and engineering staff will be maintained under the charge of Harry W. Page, who will be general manager of the Wisconsin plant, and who has been assistant general manager of the company with headquarters at Hyde Park for the past six years.

M. C. Thompson Co., 105 Latta Arcade Bldg., Charlotte, N. C., representatives of building material and textile supplies, have recently secured the services of W. R. Brown, who has joined their sales force and will represent them in the textile field.

MERROWING



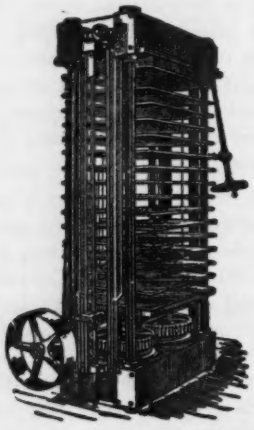
MERROW
Reg. Trade Mark.

The Merrow High Speed Overseaming Overedging and Shell Stitch Machines.

MERROWISE FOR EFFICIENCY

IT MEANS: MAXIMUM PRODUCTION
MINIMUM EXPENSE
UNEXCELLED QUALITY OF WORK

THE MERROW MACHINE COMPANY
ESTABLISHED 1838
16 LAUREL ST., HARTFORD, CONN., U. S. A.



RELIANCE
Hot Plate Screw Press
FOR
Hosiery and Underwear
Write for Catalog and Prices
Reliance Machine Works
FRANKFORD, PHILA.

JOSEPH T. PEARSON & SONS CO.
MANUFACTURERS OF
BONE DRY
HOSIERY FINISHING BOARDS
THAT WORK ABSOLUTELY SMOOTH
PROMPT SERVICE—RIGHT PRICES
1815 E. Boston Avenue, Philadelphia

GENERAL MACHINE WORKS
YORK, PA.
Manufacturers of
Circular Rib Knitting Machinery
Cylinders and Dials

Among the Knitting Mills

The organization of the Taubel-Scott Co., Inc., to replace the Taubel-Scott-Kitzmiller Co., Inc., reputed in the trade to be the largest hosiery producing unit in the world, was announced recently by Rufus W. Scott, chairman of the board of directors of the latter corporation.

The conduct of the big company will continue in the hands of Clarence T. Taubel and Rufus W. Scott, who have managed it for many years, and who announce that "there will be no change in the distribution of their products nor in the policies which have always governed the business."

The stock interest of F. Y. Kitzmiller, who has been vice-president and production manager for not quite two years, has been absorbed by the corporation, and Mr. Kitzmiller is no longer connected with the organization in any capacity, it is stated.

The Taubel-Scott-Kitzmiller Co., Inc., or the Taubel-Scott Co., as it will henceforth be known, has a capitalization of $9,000,000, and manufactures men's, women's, misses' and infants' seamless and ribbed hosiery. The concern owns mills at Riverside, Camden, Hammonton, Millville, Pleasantville, Vineland and Trenton, N. J.; Tamaqua, Shamokin, Mt. Carmel, Lebanon, Reading and Shillington, Pa.; Lenoir City, Morristown, Cleveland, and Rogersville, Tenn.; Bigstone Gap, Gate City, and Norton, Va.

The Standard Mfg. Co., Elizabeth City, N. C., manufacturers of hosiery, have increased their capital from $25,000 to $100,000 and will install additional machinery and make other improvements in their plant in the near future.

Pasquotank Hosiery Mills, Elizabeth City, N. C., lately noted to increase capital to $150,000, will double the output of the present plant and will install 84 new machines.

A knitting mill to manufacture high grade silk hose is being organized at Scottsboro, Ala., by the Commercial Club of that place and it is reported that the necessary stock has been oversubscribed.

Asheville (N. C.) Knitting Mills, Inc., are erecting a finishing room for dyeing, bleaching and finishing their product.

Shalwin Hosiery Mills have been organized at Hagerstown, Md., by Charles W. Cromer and will manufacture a line of silk hosiery.

Carlyn Hosiery Mills, Inc., Baltimore, Md., has been formed with a capital of $50,000.

The Thieme Hosiery Company has been organized under the laws of Indiana by Theodore F. Thieme and associates and a plant will be constructed at Los Angeles, Calif., 90 by 175 feet four stories and basement, together with a dyehouse, power plant and office building. Lockwood, Greene & Company are the engineers.

The M. & D. Hosiery Mills have been organized at Chattanooga, Tenn., with a capital of $125,000, by local people and a charter has been applied for.

United Hosiery Mills Corp., Chattanooga, Tenn., is rearranging its plant so as to re-route the work through the plant and also enlarge the knitting and finishing departments, thereby increasing the output something like 2,000 dozen pairs daily.

The Ford Mfg. Co., Waterford, N. Y., has preliminary plans under way for the construction of a new brick and reinforced-concrete addition to its knitting mill, to cost in excess of $100,000. Bids will be called at an early date.

The Seaboard Knit Goods Co., New York, N. Y., recently organized, will operate a local mill for the manufacture of hosiery and kindred products. The company is headed by J. H. Churchill, C. L. Bennett and H. R. Hawkhurst. The company is represented by M. Bloumberg, 222 Broadway, Brooklyn.

The Lamb Knit Goods Co., Colon, Mich., has perfected plans for the operation of its new plant addition, now nearing completion, to be used primarily as a knitting department. It will be 75 x 130 feet.

The Gillette Knitting Mills, New York, N. Y., recently organized, has perfected plans for the operation of a local plant for the manufacture of a line of knit goods. C. and J. Rosenbloom and S. Vacy head the company, which is represented by J. L. Lefkowitz, 47 West Thirty-fourth Street, New York.

The B. & S. Knitting Mills, Brooklyn, N. Y., have plans for the operation of a local plant for the manufacture of knit goods products. B. Malamud heads the company. Koppelman & Weinberg, 144 Rivington Street, Brooklyn, is representative.

The Knitting Mills of North America, Inc., Philadelphia, Pa., recently organized with a capital of $30,000, will take over and operate a local plant. Robert Bradlow, 2423 North Thirtieth Street, is treasurer.

The Interwoven Mills, Inc., Chambersburg, Pa., has acquired a local building and is perfecting plans for improvements; the structure will be remodeled for a knitting mill, and machinery installed. It is planned to have the structure ready for service within about 90 days.

The Campbell Knitting Mills, Inc., Elmira, N. Y., has preliminary plans for enlargements in its plant on East Avenue. A list of machinery to be installed will be arranged at an early date.

The Triumph Hosiery Mills, Inc., New York, N. Y., has been incorporated under state laws, with a capital of $50,000. The company proposes to establish and operate a local mill for the manufacture of hosiery and other knit goods. The incorporators are H. N. and A. H. Goodman, and E. G. Rappaport. The company is represented by S. J. Baron, 32 Nassau Street, New York.

The L. & S. Textile Co., Troy, N. Y., recently incorporated, will operate a local mill for the manufacture of textile and knit goods products. S. V. and W. J. Lewis head the company. It is represented by Mackrell & Tanney, Troy, N. Y.

The D. M. S. Hosiery Mills, Williamstown, Pa., recently organized, has perfected plans for the operation of a local mill for the manufacture of a line of knit goods. The initial output will be increased at an early date. William J. Durbin heads the new organization.

The Globe Knitting Works, Inc., Grand Rapids, Mich., has plans for extensions to its mill, to comprise the installation of machinery in a building adjoining the present main works.

The See-Ess-Enn Knitting Co., New York, N. Y., recently organized with a capital of $10,000, has plans for the operation of a local plant for the manufacture of knit goods.

products. C. S. and R. Chess head the company. It is represented by B. Chess, 302 Broadway, New York.

The New Style Knitting Mills, Philadelphia, Pa., recently organized, have commenced operations at their new plant, 439 Leonard Street, for the manufacture of sweaters and kindred knit goods. Samuel Menograd heads the company.

The Bailey Knitting Mills, Fort Plain, N. Y., manufacturers of sweaters and kindred knit goods products, have increased their capital from $75,000 to $400,000.

The Yarn Market

The fluctuations in the price of raw cotton, which began in March and developed into a decided slump, had a marked effect in curtailing the demand for yarns, especially for future consumption. While the spot demand continued in evidence, although in decreasing extent, as it was limited to the actual needs of the buyers, until the sharp break in raw cotton prices early in May when that demand was also checked. The recovery of the raw staple during the past few weeks, owing to too much rain and floods in the growing sections and other causes or assumed causes, has not been reflected in the yarn markets, and buyers at present writing do not appear to be interested even at concessions except to fill immediate requirements.

The record of the month's quotations reflects this condition as may be seen by a glance at a few examples. Frame spun carded yarn on cones was quoted at 39 cents basis of 10s on May 17th. This price held steady until May 24th when it was advanced a half cent to 39½, where it marked time until some accumulation in weak hands caused a two-cent drop on June 9th, price records falling to 37½. This price was pegged until buyers began to voice their desires when it became 37½ bid, 38 asked.

Two ply warps showed the same scant range in price variation that indicated a lack of active demand. Beginning on May 17th at 52 cents, basis of 26s, these yarns held steady until the early days of June when a one-cent loss was recorded which was recovered the next day. About the second week in June, however, the price again sagged to 50 cents bid but with little action.

Single warps during this same period showed a greater weakness in some numbers. For example, 20s held steadily at 44 cents until the second week in June, when a two-cent loss was recorded; 26s began at 50½ cents, falling to 49 cents the first week in June and losing an additional two cents in the second week; 30s, likewise, held to the 54-cent mark until the first week of June, when it sagged to 52 cents, again losing an additional two cents on June 9th; on the other hand, 40s singles, like 20s, lost but two cents in the period.

The consistent weakness of the market was also recorded in the two-ply combed peeler class, 24s, after holding a consistent 62 cents for two weeks, lost two cents on May 30th and another nickel two weeks later; 30s showed a little stronger, holding steady at 65 cents for almost the entire period and then falling to 60 cents; 40s recorded a loss a little earlier than 30s, but the total decline in this number was only two cents.

This continued weakness in the yarn division has been reflected in rather extended curtailment in some sections of New England and some curtailment among certain groups of the southern mills. Men who are market wise are advising the purchase of yarns under the present price conditions as any activity in the cloth markets will force the demand to a point where prices will be bound to advance. Also these men point out that the raw material situation is heading toward higher prices for the staple, which must eventually be reflected in the finished yarns, and experience has shown that while declines in yarn prices are usually gradual because of the stubbornness with which such declines are fought, a strong acceleration in the demand can be and usually is followed by a rapid price increase as customers get into the market and bid against each other.

Following are quotations on the Philadelphia market as of June 16th:

Single Skeins.

4s to 8s	37½ @38	10s	39 @39½
12s	40 @40½	14s	40½ @41
16s	41 @41½	20s	42½ @43
24s	45 @45½	26s	46½ @47
30s	49½ @50		

Single Warps.

8s	38½ @39	10s	40 @40½
12s	40½ @41	14s	41 @41½
16s	41½ @42	20s	42½ @43
26s	47½ @48	30s	50½ @51
40s	58 @60		

Carpet and Upholstery Yarn in Skeins.

8s and 9s 3-4 stacks	37½ @38
8 3-4 tinged tubes	35½ @36
8 3-4 hard white warp-twist	37 @37½
8 3-4 had twist waste	36 @36½

Two-Ply Skeins.

8s	38½ @39	10s	39½ @40
12s	40 @40½	14s	40½ @41
16s	41½ @42	20s	43½ @44
24s	45½ @46	26s	49½ @50

Two-Ply Warps.

8s	39 @39½	10s	40 @40½
12s	41 @41½	14s	42 @42½
16s	43 @43½	20s	44½ @45
24s	48½ @49	26s	50½ @51
30s	51½ @52	40s	60
8s to 16s	50	20s	52½

Frame Spun Carded Yarn on Cones.

8s	37½ @38	10s	38 @38½
12s	38½ @39	14s	39 @39½
16s	40 @40½	18s	41 @41½
20s	41 @41½	22s	42 @42½
24s	43½ @44	26s	44½ @45
30s	47 @47½	40s	58 @50
30s Double carded	50	30s tying-in	43

Two-Ply Combed Peeler Skeins and Warps.

8s to 16s	50	20s	52½
24s	55	30s	60 @62
40s	70	50s	75
60s	85	70s	92 @95
80s	$1.05@$1.10		

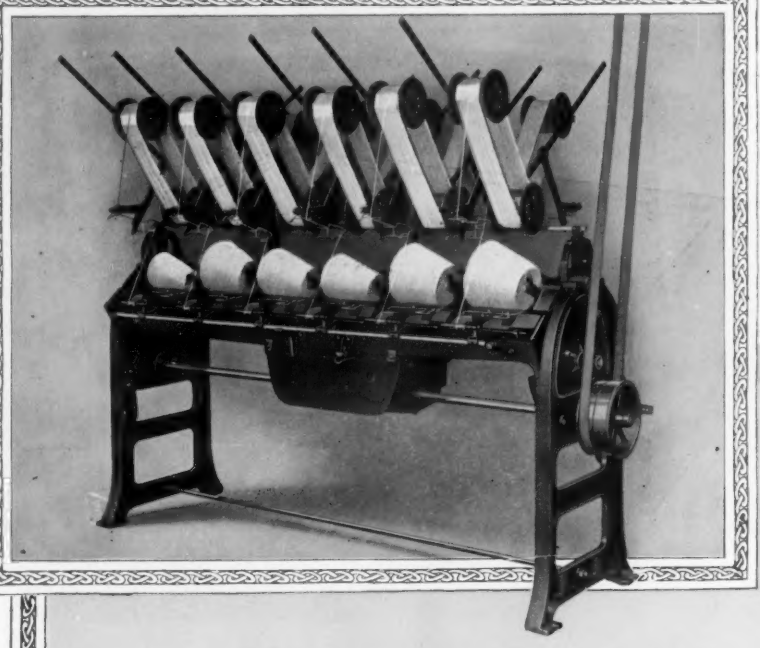
Mule Spun Carded Yarn on Cones.

10s	42	12s	42½
14s	43	16s	43½
18s	44	20s	46
24s	48	26s	50
30s	54	40s	65

Mule Spun Combed Peeler Yarn on Cones.

10s	50	12s	51
14s	52	16s	53
18s	54	20s	55
22s	56	26s	62
28s	63	30s	64
36s	66	38s	72
40s	73		

The National Aniline & Chemical Company, Inc., 40 Rector Street, New York, has just issued its semi-annual booklet of Dyer's Formulas for matching the fashionable shades for the coming season as announced in the 1923 fall season shade card of the Textile Color Card Association of the United States, Inc. In addition to the formulas, methods for dyeing are given for obtaining the designated shades on skein silk, cotton, wool and leather. Copies may be obtained upon request to any of the "National" branch offices.



LEESONA
REG. U.S. PAT. OFF.

UNIVERSAL SKEIN *to* CONE WINDER *for* SWEATER MILLS

The No. 180 Universal Winding Machine, known as the "Universal Skein to Cone Winder" produces a cone with a maximum diameter of 10 1-2 inches, the largest concentration of yarn in one package known to the sweater manufacturing industry. This large cone is of almost inestimable value on automatic machines on large orders but the size of the cone can be varied at will.

The skein-to-cone winder is capable of winding tender wool yarns having low tensile strength and embodies the advantages of other Universal Winding Machines---high yarn speed, equal tension and minimum of waste, both in the winding operation and on the knitting machine.

Investigate the advantages of this wonderful machine in the manufacture of sweaters and bathing suits.

Set a time when our representative can lay before you *all* the advantages of Universal Winding and its economies.

UNIVERSAL WINDING COMPANY

LEESONA
REG. U.S. PAT. OFF.

Providence
New York
Chicago

BOSTON

Philadelphia
Charlotte
Utica

Montreal and Hamilton, Canada

DEPOTS AND OFFICES AT MANCHESTER AND PARIS

IT is not only exactness of dimension, not only evenness of temper, not only velvety smoothness, that makes Torrington Needles good needles.

It's all of these qualities coupled with careful gauging at every operation and more than a dozen inspections that make Torrington Needles—

"As like as two peas."

The TORRINGTON COMPANY
TORRINGTON CONN. U.S.A.

C. B. BARKER & CO., LTD.
140-144 W. 22nd STREET,
NEW YORK.

LOS FABRICANTES UNIDOS
964 CALLE BELGRANO
BUENOS AIRES

MANUFACTURERS SUPPLIES CO.,
CHERRY AND JUNIPER STS.,
PHILADELPHIA.

The Knit Goods Market

The ground that was lost in May in the retail market business in knitgoods was recovered in June. Only a touch of heated atmosphere was needed to put life into a listless market. It did not take dealers long to find that consumer buying was eating into their broken stocks at a rate at which shelves and bins soon would be empty. Jobbers at once were brought face to face with a revival of demand for hosiery and light underwear. They were pretty well bought ahead of the former, so that hosiery manufacturers did not immediately have any material increase in new orders, but they did receive many calls for rush deliveries. As was to be expected, dealers were not prepared in underwear lines for the high temperatures of early June, and soon mills were having an accumulation of repeat orders.

Business had slipped back in May. It was the first month of the year to show declines, according to mill reports, in comparison with last year. This apparently was not unforeseen by manufacturers, for reports from a large group of representative mills show that in April the production of hosiery fell off 26 per cent as compared with March. Figures for April of 1922 are not available. Other statistics are supplied by the Third District Federal Reserve Bank, which embraces all of the hosiery centers of Pennsylvania. The bank reports increases in production of 6.4 per cent for mills selling to jobbers and 15.2 per cent for mills selling to retailers, making comparisons on April of this and last year, but there were declines in April last as compared with March, the falling off amounting to 5.5 per cent for mills selling to jobbers and nine per cent for mills selling to retailers. Returns for May, which had not been compiled in time for this report, doubtless will tell of a falling off from April.

Until last month mills in general were having better business than in the first four months of 1922. The slowing down may be attributed to distrust of the raw materials markets, which were regarded sufficiently high to permit of a drop, and, of course, to the unwillingness of distributors to buy goods at current prices. The volume of mill sales of hosiery began to fall off in April, the slipping back amounting to about 10 per cent in comparison with March, while the gain over April, 1922, was 48 per cent, according to the statistics of a group of manufacturers which disregard those of the Federal Reserve Bank.

The statistics are interesting, chiefly as showing that jobbers may be assumed to have been fairly well supplied with hosiery—in stock and on commitment—and this assumption is supported by the fact there was no rushing to market on the increased volume of business among retailers, notwithstanding the prevailing belief manufacturers were accumulating no stocks, the trend being, on the other hand, toward curtailment of output.

The May lull was what was needed to halt inflation of wages and prices, and its effect was not lost when, last month, demand became more spirited. June brought practically no advances, nor were there any declines other than may be looked for on occasions when the market is in the first stage of recuperation. Concessions were made on certain hosiery numbers going to a distinctive clientele; not in price competition, but for keeping machinery in operation and mill organizations intact for the further spurt that was in prospect. Jobbers were fighting values without disturbing them. The knowing distributor asked for no recessions on the fluctuations in cotton, but felt he held a whip over the manufacturer, assumed to be in need of business. There was no little buying for price, and seconds were in good demand, particularly from speculative jobbers.

Several hundred dozens of ladies wool-and-cotton hosiery, priced around $3.25 to $3.50 a dozen, were offered to a jobber at $2.50 by a commission house which had about made the rounds among its customers and was left with the insignificant lot. Although offered at fully 75 cents a dozen under value, a number of small jobbers passed it by, the lot eventually finding a taker at the quotation.

Seconds of a ladies' wool-and-cotton stocking were bought by a small jobber at $1.75 a dozen. He had the lot clocked, at a cost of one dollar a dozen, and at last accounts was offering it to retailers at $4.75. The latter were expected to mark the stockings 69 cents a pair, special. How much the mill got out of the several cases matters little, now that the transaction, so far as the manufacturer is concerned, is a closed incident, but the consumer is to be held up for a margin of 237 per cent on the cost of the stocking to the jobber.

A more merciful retailer conducted a "bargain" sale with hosiery at 39 cents a pair which cost him $2.75 dozen, taking down about 66 per cent profit for himself, although the retailer tells the jobber and manufacturer that he figures on but 50 per cent on regular sales. The sage who confided that high prices were due to large profits is in no immediate danger of being embarrassed by successful contradiction. It is a weakness of many jobbers to spar for a special price for enabling them to pass goods to a favorite customer for a "special sale," and usually the mill that accommodates these purveyors sacrifices what little margin had been provided for. Merchandising hosiery is fine art no less than making it.

A Pennsylvania manufacturer brought out a line of full mercerized 200 needle half hose last month, priced $2 to jobbers, intended to be a 30-cents-a-pair retailer, in competition with combed socks at a quarter, and mercerized with plain cotton top at a like price. This manufacturer was favored in having been able to pick up a lot of mercerized yarn on the basis of 95 cents for 50s 2-ply, which put a price of 85 cents on 40s and $1.05 on 60s. It is stated there was a sale at even lower figures. The weakness in yarn was opportune for averting the necessity for advances in prices of most all lines of mercerized hosiery. As the matter stands, hosiery in this class is being held for market quotations, and recently sprang into somewhat better demand, although it still is by no means active.

Half hose of artificial silk plated on mercerized yarn has been proving a good seller. A primary market operator is quoting $3.50 to jobbers for a stocking of this construction with all-round drop stitch and has had difficulty in obtaining it in sufficient quantity to supply his trade. Several manufacturers declined orders for the sock at the price specified.

ABERFOYLE MANUFACTURING COMPANY

MERCERIZED YARNS

MAIN OFFICE
EMPIRE BUILDING
PHILADELPHIA

ADAMS-FRANKLIN BUILDING
CHICAGO

MILLS
CHESTER, PA.

WESTAWAY BUILDING
HAMILTON, CANADA

DIXIE MERCERIZING CO.
STRENGTH QUALITY
LUSTRE
CHATTANOOGA, TENN.

Mercerized Yarns

C. P. Mercerized Cones & Skeins
20/2-80/2 Natural and Gassed

DIXIE MERCERIZING CO.
CHATTANOOGA, TENN.

Chicago Office
817 Old Colony Life Insurance Building
CHICAGO, ILLINOIS

REPRESENTATIVES: Philadelphia, Pa., Cameron & Pfingst—Reading, Pa., Cameron & Pfingst—Canada, Slater & Co., Toronto.

Warren Soaps

Preferred Stock

The best quality tallow, palm, and red oils and olive foots, carefully balanced with the purest chemicals for your special purpose.

Uniformity guaranteed by test before shipment.

Warren Soap Warren Service

Warren Soap Mfg. Co.
Established 1870
77 Summer St. Boston, Mass.
Incorporated 1890

A ladies' stocking that looks like a winner, at the price put on it, is a 23-inch fiber boot with a resist stripe in harmonizing color. Few, if any, manufacturers have hitherto essayed the resist stripe in artificial silk by the means employed on tram silk hosiery. The stocking in question is priced $4.75 a dozen to jobbers. While it is too new to take rank among staples, it cannot be put in the class of novelties, which sometimes are a costly experiment, as a Pennsylvania manufacturer learned to his sorrow.

A jobber who had fallen for the craze for Egyptian decoration of hosiery persuaded this mill man to print three cases of ladies' mercerized hosiery in a jumble of characters and figures intended to represent obeliscan hieroglyphics. The jobber's customers did not take kindly to them and he set out to return them to the manufacturer on some pretext about as silly as the stocking design. A flapper may have a liking for certain hosiery monstrosities, but when it comes to making her limbs resemble an inverted obelisk she is liable to stop right there, as was revealed to a retailer who cajoled a customer into putting on a pair of the King Tut things.

High colors still are popular in ladies' hosiery of both silk and mercerized yarn, preference running to bright red and vivid green. It is noted, however, that even with red shoes, such shades as taupe and beige have a strong following, for one reason because such shades may be worn with skirts of either of many colors.

Speaking of hosiery shades and frequent style changes, a trade note says "No change from the previous week is shown in the report of the Gotham Silk Hosiery Co. on the popular colors sold in the chief hosiery shops." This is making progress, for manufacturers had about reached the conclusion color style was changing every 24 hours. It looks now as though some of the colors might be good for for ten days to two weeks. A Philadelphia manufacturer, who says jobbers are buying on a retail basis, is making up no colors, dyeing as orders come in. What he sells one day is dyed up the next and shipped out on the third day. In this way he is kept in a frame of mind in which it is possible for him to feel he is engaged in the hosiery business.

In the keen rivalry for business, a few manufacturers are turning in a large way to split sole half hose of silk, and it is stated the orders placed with one builder of knitting machines for making this type total almost 3,000, and no promise of deliveries against additional orders. A southern mill has contracted for several hundred of the machines, all latch needle, a Pennsylvania manufacturer is to get 200, and one of the larger establishments has an order in for 1,400, it is stated.

With the split sole saving silk estimated by one manufacturer as amounting to 50 cents a dozen pairs of stockings, it is obvious the installation of so many machines equipped with the popular device either will increase sales of silk half hose or cut into the business of manufacturers not using it. There was shown recently a latch needle machine for making ladies' split sole stockings, and there seems no doubt this shortly will be installed in a general way. And now comes the prediction that it will be but a short time before there will be volume production of spring needle split sole hosiery, for men and women. In this way the builders of circular knitting machines are narrowing the gap in build between seamless and full fashioned, at the same time broadening the gap in price, the more so as raw silk declines.

Burdensome stocks of full fashioned silk hosiery seem to have been about absorbed. Retailers no longer are advertising the spectacularly low prices of two to three months ago, and mills note a better flow of small orders. In the aggregate, however, the orders do not measure up to the consumer buying pace as reported in retail stores since the first of June, so that it would appear dealers either were well provided for or are buying for needs only as they arise.

As indicating the drift, one of the more important community ladies' shops in Philadelphia reports that in the first ten days of last month sales equaled those for the month of May. Jobbers also report increasing business in silk hosiery, especially in full fashioned, but this is by no means reflected in conditions among manufacturers other than those making chiffons and novelties with lace clocking.

While a leading manufacturer of silk hosiery selling direct to consumers through canvassers declares that not more than one per cent of the silk stockings produced are distributed in this way, many persons in the trade say there is no doubt mills selling to jobbers and retailers are feeling the effect of the activities of canvassers, whose business is expanding with the establishing of branch offices in a number of cities which operate, in a way, as mail order establishments. A newcomer in the field of direct sellers is the Red Mill Hosiery Co., Philadelphia, with a factory in the Kensington district of the city and an office in the Drexel Building. This company got under way less than a month ago. It is capitalized at a half million dollars and the executive is said to have had a wide experience as a sales corporation head.

Despite the ups and downs in raw silk—more downs, recently, than ups—silk hosiery prices have undergone practically no change in the last eight or ten weeks. At a dollar under the mid-May quotation, the raw fiber was regarded too high for manufacturers not receiving any new business of moment. Hosiery advances which came out before silk began a downward course have not been disturbed, and apparently did not check buying by retailers drawing direct from mills, which, in this class have been phenomenally busy in contrast with manufacturers selling jobbers.

The jobbers' attitude toward the market, a commission house executive says, is more hostile than that of the retailer, and besides, he continued, the nearer the manufacturer can get to the consumer the easier is it to sell goods. That the retailer mills have had a greater relative volume of business is supported in the Federal Reserve Bank figures crediting them with an increase of 15 per cent in production in April, compared with April of 1922, while the increase of jobber mills was but a trifle more than six per cent.

Mills making standard types of combed yarn hosiery, whether for men or women, have had a satisfactory season. Yarn was in their favor, and their product was at no time in danger of being taken out of its retail price range. Misses' combed ribs also sold well, and, as with combed hosiery generally, did not feel the full force of the May dullness. Several lines of fancy top ribs for misses were for a time sold up as far as mills were willing to sell,

and came into new demand last month. Top patterns that made a hit made quick selling for a few mills, and at times seemed to be the life of the hosiery trade. They still are a good proposition for jobber and retailer.

Up until well along in June low end hosiery prices were holding firm, and there was no indication of a weakening, even after yarns had gone to the lowest level since this year's recession from the peak for cotton. But when one house selling direct was reported quoting carded yarns down to 40½ cents for 20s single there was a question whether jobbers might not ask for lower prices on carded hosiery. One of the larger mills, a southern establishment, had been holding for $1.22 for 176 needle half hose, and this was commonly accepted as establishing a price for mills generally. But later the southern mill's price was reduced to $1.12½.

A Georgia mill is comfortably situated in the matter of orders for low end hosiery, both men's and women's, and it is not believed in the trade that there are momentous stocks anywhere. Mills making this class of goods are reported supplied with business for the next month or two, but it is the opinion of an important factor that by August it may be the wiser course to curtail production, unless in the meantime there come better support from jobbers. It was suggested by this authority also that slight reductions in prices of low price staples might be expected during the late summer. The bulk of the business coming through at the time of the interview was represented in small repeat orders. Manufacturers want to see more interest in goods for fall and winter.

A Central West jobber having ladies' cotton heathers on order for delivery in October, recently called for shipments in July. Like many of the distributors, he had bought rather heavily. It is assumed he has sold beyond his expectations. Low end heathers and men's and women's cotton-and-wool, the latter priced at $3.25 to $3.50 to jobbers, look like safe property for the fall trade and there is a good outlook for moderate priced silk-and-wool. One manufacturer reports his advance orders showing the largest aggregate since this type of stocking leaped into popularity.

Infants' socks, combed and mercerized, were put on the market in June for next spring, this being the first of the openings for 1924. But manufacturers came out very cautiously with their lines, showing them in a quiet way in advance of any general naming of prices. There was fear of a repetition of the fiasco of last year, when, after a few mills started selling for this year, one or two others came out with radically lower prices. The effect was to so disturb jobbers that buyers at once deserted the market. It need not be surprising if even lower prices than last year will be heard before selling gets well under way, for the mills want business and may be willing to work on a very close margin for getting it, if competition be keen, as seems likely, as the impression exists potential production is in excess of actual requirements. It is understood, however, that jobbers made an almost complete clean-up of their stocks, and it is commonly reported retailers are in a fair way to finish the season with a need for more socks.

There is fundamental soundness under the hosiery market situation, and this should not be seriously disturbed, unless, in the event of restricted buying by distributors, manufacturers repeat the blunder of accumulating stock. This seems unlikely, in view of high prices of raw materials.

There seems little probability of pronounced activity before the middle of July, and there is likelihood jobbers will not operate in a big way before August. One of the best informed hosiery men in the primary market says he looks for a fair buying movement soon after the Fourth of July, as by that time cotton may be expected to be on a more stable price basis. "I am reliably informed," he says, "that St. Joseph and Kansas City jobbers for some time have been short of goods. They were expected to be in the market in the latter part of June or early in July. What is true of these jobbers as to stock conditions, I believe, is true of the rank and file. I think," he continued, "that the slowing down was for the best, and that the end of the year inventories will present a very satisfactory showing."

Reports of individual manufacturers as to summer underwear business are in violent conflict with those of a group of mills, principally in Pennsylvania, where a great part of ladies garments are manufactured. New York selling agents and direct mill representatives all told of volume buying for the current season, and their representations seem to be true when comparison is made with corresponding periods of 1922 and 1923. As early as March, however, a compilation of returns from scattered manufacturers in the Keystone state showed an increase of 148 per cent in cancellations as compared with the previous month, and over 100 per cent in comparison with March of last year. In April there was a decrease in cancellations from both the preceding month and April last year. Both comparisons also show a falling off in shipments, although there were increases in the orders booked.

In spite of the somewhat discouraging figures, manufacturers as early as May were discussing opening dates for the light weight season of 1924, and the air still is full of talk on this subject. The average jobber is represented as more interested in disposing of remaining stocks of light weights and making orders for winter weights stick, than in buying for next spring. Some of the more intrepid operators, however, are understood to have placed orders for light weights with manufacturers naming exceptionally attractive prices, for preferred accounts.

It usually is held by manufacturers who go on the market in advance of the procession that the time to sell is when jobbers are ready to buy. This would seem to true, but there is such a thing as persuading a few buyers to do what the great majority would hesitate to do. But taking the proposal at its face value, it does not appear that any great quantity of underwear to go over the counter next spring and summer will be sold before August.

Some interests prefer that there be no general opening before the first week in September. This might prove a serious matter for manufacturer and jobber, but from the mill viewpoint it would seem that a late opening and a steady six months' pressure on mills would be preferable to selling early and risk a repetition of the cancellation hysteria of one or two spring months this year. The cancellations cannot be ascribed to unusually cool weather in May, for they were being forced on manufacturers and jobbers a full sixty days before.

When in June high temperatures were being recorded there was some scurrying of jobbers and retailers for immediate delivery goods, orders calling for parcel post or ex-

press shipment. Retailers' stocks were shown to be low; those of jobbers were not in such bad shape that there was any rushing to market to cover for the repeat business coming to them. And it developed that most mills which had let it be understood they were sold up for the season of men's light weights had goods for spot shipment.

There was current for some time a rumor that prices of men's bal briggans were being cut in competition. This could not be confirmed, and it is not believed in the trade that any manufacturer offered lower prices, even after cotton had softened by considerable, although it is not improbable modest concessions in relation to several of the slower selling lines were obtained by a few jobbers looking for a leader for retailer special sales.

Summing up as to the light weight underwear outlook, a buyer for a western jobbing house who is rated one of the shrewdest and most conservative of the New York resident buyers said:

"So much will depend on the reports dealing with the cotton crop that it is hard to form an opinion as to when opening prices ought to be named. If the immediate outlook is favorable and indications continue to point to a very large crop, necessarily the jobber would want the opening for next spring delayed as long as possible, until, at least, the truth about the crop were available. On the other hand, if crop condition reports be unfavorable, it may be assumed jobbers would wish to operate, say, beginning about the middle of July. On the whole, I believe it might be wise to wait until early August."

"What's the use of talking about underwear for next spring," another jobber said, "while business in winter garments is so unsatisfactory and uncertain?"

A few weeks ago manufacturers had on their books more than twice the volume of unfilled winter underwear orders as a year before, but in March cancellations reported by a group of mills showed an increase of 45 per cent over the previous month and 25 per cent over March of 1922, and later reports indicated a falling of in new business.

Several mills in the Central West selling to jobbers and at least one distributing through retailers have had a big underwear year, in both light and heavy weights, and the sales of one are understood to have broken all records for volume business. These mills have a somewhat distinctive following, and their sales are hardly to be accepted as a criterion. The slipping back, which was sharply felt in May, continued in June, for all winter underwear mills.

The great bulk of the underwear for next fall and winter had been contracted for before there was any uneasiness over the season's finish, and much of that which was bought for deliveries during the first quarter of the year has passed to retailers and is paid for. Some of the early purchases now are regretted, for prices named several weeks ago for deliveries in October and November are no higher than at the opening, although yarn quotations are approximately three cents a pound up.

Price stabilization at around the post-opening revisions would go a long way toward putting the winter underwear market in a comparatively healthy condition and make it practically safe to open next spring's light weights sooner than now seems likely.

"There is no question that business leaders of the country have a well developed bump of caution," says an important primary market operator, who states also, "jobbers and retailers are possessed of a feeling of uncertainty in relation to underwear and, in fact, all dry goods commodities. This is the factor that is at the bottom of the present market quiet."

Where Do You Stand?

BY RICHARD NEUBECKER.

When you open your mouth, what kind of a noise do you make?

Every time you speak a good word for your firm you speak two for yourself, for the man who boosts his plant is always respected by his employees. It's an easy thing to make a nasty remark, but it is difficult to stop that remark from traveling after it has once been made.

The monkey in the jungle swings from limb to limb and from tree to tree at a remarkable speed, but the monkey is as a snail compared to the caustic remarks and comments of a chronic pessimist. The monkey does not berate either the limbs or the trees, for they are his home. They mean safety and comfort to him.

The pessimist, however, is not so considerate of the company with which he is connected. Sometimes his happiest moments are when he is "knocking" the plant that gives him a living and the gas for his flivver. Things are not done right in his plant, and nobody else possesses the ability to do things as they should be done. They are all so thick-headed that they don't see the glaring defects as he sees them so plainly. He lives in darkness and radiates gloom.

The result of the influence that this attitude on the part of an operating executive creates among the help is often destructive. The employees become cranks, and to have a cranky and knocking employee in your plant is worse than rheumatism. The latter may put a few joints out of order, but the former will contaminate the mind, body and soul of every loyal employee that you have.

Station yourself on a street corner in a large city and watch the people go by for an hour as they are homeward bound from their daily toil. Ninety-nine out of a hundred will seem contented. They are optimists unawares. The rays of the sinking sun are no more entrancing than the smile upon their lips and the humanity in their hearts. The hundredth one may be different; he is the lone black sheep in the flock, the cloud that dims the brightness of the others, and the community he lives in. He is a pessimist, a crank, and he knows it. His soul is shrouded in gloom from which he never escapes. He is a bore even to himself. The crank is never happy no matter what position he may hold, or how easy his job should be.

The optimist is seldom sad or grumbles, no matter whatever the task may be that is alloted to him.

Not so much for application to himself alone, but for the sake of his influence upon the workers under him, the operating executive should bear these thoughts in mind. As was pointed out in COTTON some time ago, the influence that even the personal actions of the overseer or superintendent has upon his help is immeasurable, and the danger of a misconception of some unguarded word or remark is exceedingly large.

The Function of the Job Analysis.

(*Continued from page* 794.)

cian, personnel director, production manager and master mechanic all have a part in making and using the job analysis. The personnel division has perhaps more every day use for the job analysis than any other department. Through this means, it tries to fit round pegs into round holes. It is used as a basis for improving working conditions, reducing accident hazards, adjusting wage rates, and improving sanitary conditions.

Without going into finer details, jobs can be divided into six elemental groups. There are jobs that can be done by boys or youths, those most suitable for old men, those that common laborers can do with little or no training, those that require men with considerable training, those that any women or girl can do, and those that require a trained woman. It is economic waste to have able-bodied adults doing jobs that can be done just as well by sixteen-year old boys. As a rule, there is a different wage level for the six groups. Considerable reduction in labor costs can often be made by proper classification of jobs so as to obtain the type of help needed. The nature of the work having determined the classification of the job, the personnel department can fix rates in accordance and can fill the jobs with applicants from the proper group. It is realized that this cannot always be done because of labor shortage of the particular kind needed. In such cases it is sometimes possible to change job requirements so as to bring them into another group.

The job analysis enables the management to equalize labor requirements and wage rates throughout all branches of the establishment. In many industrial concerns all manner of wage incongruities exist. I have known several instances where unskilled employees were paid more than were skilled employees in the same organization. In one case truckers and janitors received a higher rate than did the men who made the final inspection of the product. These inspectors held a very responsible job and it took months to train reliable employees for this work. Such rank inequalities breed labor unrest and develop employment problems. By establishing adequate job and labor standards such inequalities are shown up and can be removed.

There are many details involved in preparing job analysis and the resulting standard practices. A few years ago the writer was a member of a commiftee of the National Association of Employment Managers which investimated and studied this subject. The methods and forms then in use by various concerns were carefully examined and digested in a report made to the association. This report did not attempt to cover anything but the use of the job analysis as a basis for employment. From this viewpoint it submitted the following outline which is shown here as an illustration of the material which the job analysis places before the employment manager.

A—The work:

1. Identification.
   - a—place, department, section, division, shop.
   - b—classification, job, name, grade, symbol.
   - c—description, in brief of material, operation, number employed.
2. Working Conditions:
   - a—time, permanent, temporary, overtime, day, night, part time, etc.
   - b—place, inside, outside, in and out.
   - c—general nature, floor, bench, machine.
   - d—posture, standing, sitting, stooping, walking, reaching.
   - e—fatigue, heavy, medium, light, very small.
   - f—operation, variety, repetitive, automatic.
   - g—motion, quick, slow, dangerous, etc.
   - h—accuracy, coarse, fine, exacting, rough, close.
   - i—disagreeable factors, dirty, greasy, hot, moist, dust, fumes, acids, etc.
3. Duties and Responsibilities:
   - What are the most important operations performed by the worker?
   - Just what does he do? What are the responsibilities of the job?
4. Training: Experience, education needed. Time to learn this job.
5. Pay:
   - a—method, day work, piece work, task and bonus.
   - b—amount, starting rate, next advance, maximum.
6. Hours: Length of working period, shifts, rest periods, meal times, etc.
7. Opportunities:
   - a—promotion, usual sequence or line of promotion. How soon?
   - b—transfers, what jobs use to advantage the experience gained on this one.

B—The Worker.

1. General:
   - a—experience.
   - b—schooling.
   - c—nationality.
   - d—special.
2. Physical:
   - a—sex
   - b—age.
   - c—height.
   - d—weight.
   - e—strength.
3. Mental:
   - a—intelligence.
   - b—memory.
4. Moral or Character:
   - a—neatness.
   - b—patience.
   - c—carefulness, etc.

With an intelligent use of such an analysis, the employment manager will be better able to get employees onto jobs for which they are best suited and where they will be contented. Contentment reduces the susceptibility to annoying conditions outside of the job itself. When the job is distasteful the worker readily grows into a fault finding mood that is unlimited in its scope. This is a trait of human nature that the management should recognize and which it can benefit by making proper job requirements and filling the jobs with the properly qualified workers.

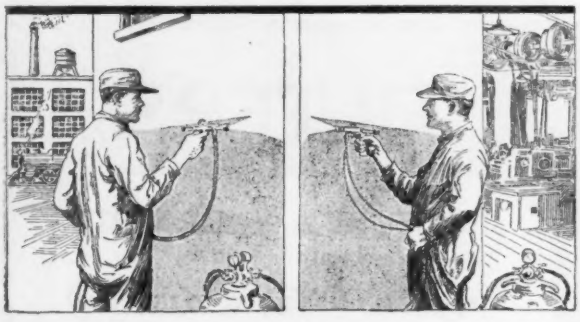
The Pastorfield Company, Richmond, Virginia, manufacturers of industrial paints, have appointed the Southern Textile Specialty Company of Greenville, S. C., as representative for their products.

Sandoz
ANILINE DYES
SANDOZ. for ALL TRADES

We carry a complete line at all branches.

For samples and prices apply at any of our offices

SANDOZ CHEMICAL WORKS
INCORPORATED
238-240 Water St. NEW YORK
12 South Front St., PHILADELPHIA
36 Purchase St., BOSTON
126 Market St., PATERSON
145 Brevard Court, CHARLOTTE, N. C.



All of Your Mill Painting
can be done *better* and *for less* with the

DeVilbiss
Spray-painting System

WHETHER painting the interior of your mill or protecting the outside walls against the elements, or painting the mill homes—the DeVilbiss Spray-painting System will average 4 to 5 times faster on these different jobs than hand brushing. This means a 75% to 80% saving in painting labor costs. In addition, painting the DeVilbiss way, you get a more even, uniform, complete and a longer lasting coating as well as much cleaner work.

We shall gladly tell you more about these savings and improvements the DeVilbiss System makes possible

The DeVilbiss Mfg. Co. 258 Phillips Ave. **Toledo, Ohio**

AUTO GYP
Process of Dyeing

Saves Money!!
Increases Profits!

The AUTOGYP Process of Dyeing can solve your dyeing problem, saving you money, increasing your profits and producing a much better fabric with a softer "feel."

AUTOGYP is fast replacing the old method of dyeing and bleaching separately.

With AUTOGYP, the entire operation of dyeing and bleaching is performed in ONE operation of only THREE hours time. No additional equipment or unnecessary expense involved. Eliminates boiling out in kiers. Saves bleaching, shrinkage, steam, labor, time, water and all the chemicals used in the chloride of lime method of bleaching.

We are willing to prove our claims in your own mill, on your own material, under your own conditions at **our** expense.

Our booklet is brimful of interesting and informative data that every mill man should possess. Where shall we send your copy?

Write us.

Surpass Chemical Co.
Albany, N. Y.

SURPASS CHEMICAL CO. FORMERLY AUTOGYP PROCESS OF DYEING AUTOGYP PATENTED IN U.S.A. IN CANADA ALBANY N.Y.

DYES AND BLEACHES IN ONE OPERATION

"HURRICANE"

RAW STOCK DYEING MACHINE

MACHINERY

INCLUDES

complete equipment for Saturating, Dyeing and Drying Cotton and Wool Stock.
Scouring, Dyeing and Drying Yarn.
Dyeing, Drying and Finishing Hosiery.
Carbonizing Equipment for raw stock and piece goods.
Loop Dryers for underwear, Turkish Toweling and silk piece goods.

Catalogs on request.

The Philadelphia Drying Machinery Co.

Office and Works: 3351 Stokely St. Philadelphia, Pa. Boston Agency: 53 State St.

DURABLE K-W UNIVERSALLY USED

KLAUDER - WELDON
DYEING - BLEACHING-SCOURING MACHINERY

There are K-W machines in use which were built nearly half a century ago and which are still doing their work efficiently and economically under severe service. This is sufficient evidence of the durability and capability of K-W machines after long years of subjection to the ravages of live steam, heat and alkalis.

K-W Machinery, by its accomplishments, has steadily and irresistibly built up a reputation that has made the name "Klauder-Weldon" synonymous with the "world's best dyeing, bleaching and finishing machinery."

Our interest in upholding the K-W reputation means that you MUST be satisfied, and our suggestions to prospective purchasers are made with the view toward solving any dyeing, bleaching or scouring problem for all time. We will be glad to answer any and all questions without obligation on your part whatsoever.

Write today for K-W Literature

THE KLAUDER-WELDON DYEING MACHINE CO.

Bethayres, Pa., U. S. A.

H. G. Mayer, Southern Agent,
Realty Bldg., Charlotte, N. C.

Absolutely Automatic

Positively Safe

The first new development in the centrifugal field for years. No bother with starting buttons, stopping buttons, brakes, or raising the cover. The HUMATIC does all this automatically, and produces uniform extracting at reduced labor cost. There's more you'll want to know about the HUMATIC —write today for complete information.

The American Laundry Machinery Co.

Specialty Dept. C. **Cincinnati, Ohio**

The Canadian Laundry Machinery Co., Ltd., Toronto, Canada.

American Laundry Machinery Co., Ltd., London, England.

Automatic Safe!

FILTERS

PRESSURE GRAVITY

Especially designed to meet all requirements of Textile Mills.

Economical in upkeep.

Perfect satisfaction.

NORWOOD ENGINEERING CO.

Florence Mass., U. S. A.

CHAS. M. SETZER, Southern Representative,

Charlotte, N. C.

ONE MINUTE

is all the time required to thoroughly and uniformly condition your yarn in the Sargent Yarn Conditioning Machine.

Progressive mill men no longer tolerate imperfections from "Kinky Filling" or the uncertainties of old-fashioned systems of conditioning. The Sargent Yarn Conditioning Machine sets the twist, restores proper degree of moisture with thoroughness, accuracy and rapidity. Hour after hour, day in and day out, the yarn comes through the Sargent with the same uniformity of condition.

The number of mills who use the Sargent is one proof of its superiority.

C. G. SARGENT'S SONS CORPORATION, GRANITEVILLE, MASS.

Fred H. White, Southern Agent, Charlotte, N. C.

SARGENT YARN CONDITIONING MACHINE

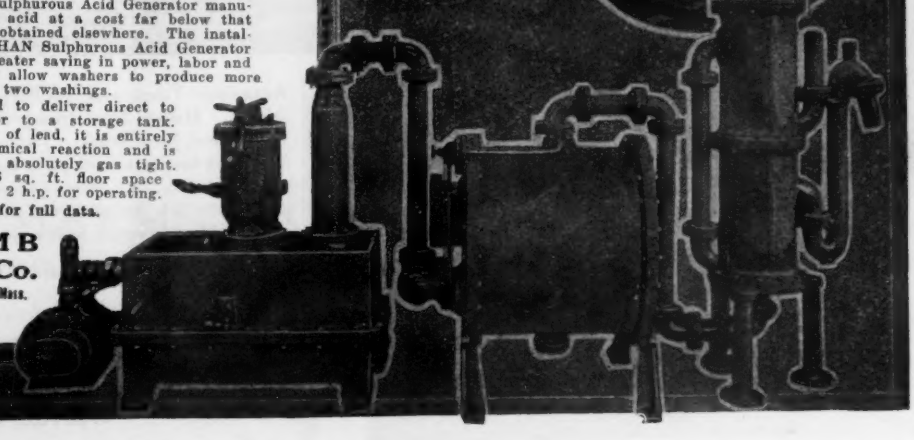
Sulphurous Acid Generator

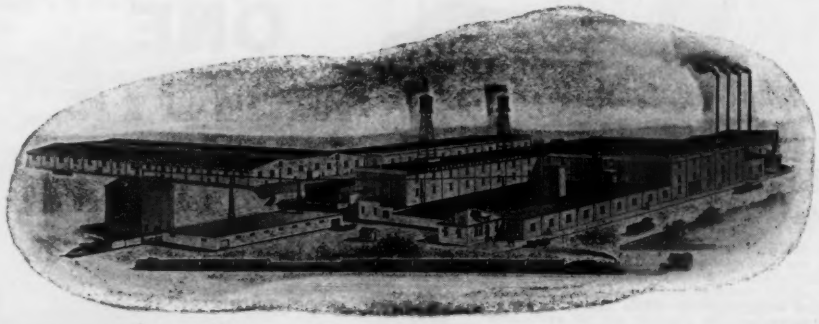
Make Your Own Anti-Chlor In the Form of Sulphurous Acid

You can make your own anti-chlor in the form of sulphurous acid, right in your own bleach house, and in quantities only as you demand.
Sulphurous acid has a greater affinity for chlorine than sulphuric acid. As an anti-chlor the sulphurous method is unsurpassed in that it entirely eliminates danger of goods being damaged or tendered on dryer, and assures a uniform, neutral product.
The MONAGHAN Sulphurous Acid Generator manufactures sulphurous acid at a cost far below that at which it can be obtained elsewhere. The installation of a MONAGHAN Sulphurous Acid Generator will also effect a greater saving in power, labor and loss of time, and allow washers to produce more besides eliminating two washings.
It can be installed to deliver direct to souring machine or to a storage tank. Constructed wholly of lead, it is entirely impervious to chemical reaction and is guaranteed to be absolutely gas tight.
Occupies only 36 sq. ft. floor space and requires only 2 h.p. for operating.

Write us for full data.

MACOMB Machine Co.
230 Newton St., Waltham, Mass.





VICTOR MILL STARCH

The Weaver's Friend

It boils thin—it penetrates the warps—increases breaking strength and carries the weight into the cloth. Being thoroughly washed free of gluten and other foreign matter it gives a bleach and finish to the goods that you can get from no other starch.

A trial order will convince you that VICTOR STARCH has no equal on the market.

THE KEEVER STARCH COMPANY, Columbus, Ohio

Southern Agent: MR. JAMES H. MAXWELL, Greenville, S. C.

If you are not already using VICTOR STARCH call on our representative for a demonstration at your convenience.

Tycos

TEMPERATURE INSTRUMENTS
INDICATING - RECORDING - CONTROLLING

do away with the guess work factor in the processing of textiles, at least as far as the maintaining of uniform process temperature is concerned. Do you know what *Tycos* Temperature Instruments can do for you? Investigate by sending us a letter or ask for our General Industrial Catalog.

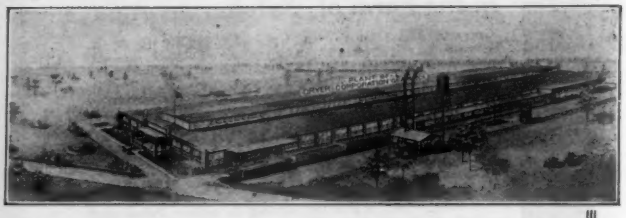
Taylor Instrument Companies
ROCHESTER N.Y.
There's a Tycos or Taylor Temperature Instrument for Every Purpose

865

Perfect Insulated Dryers

MILLER SYSTEM

Twenty-Five Years of Successful Operation



Automatic Truck and Tray Type Dryers for all textile fabrics. Drawn Steel frame members uniform in size, not formed by a break. The only dryers carrying 85% Magnesia insulation, which is the highest grade insulation manufactured. All joints between the frame and panels that form the inclosure are air sealed. This improved patented construction is found only in the Miller Dryers.

The story will be told in detail if you are interested.

Correspondence Invited

DRYER CORPORATION OF AMERICA
GENERAL OFFICES AND PLANT
Warren, Ohio

Staley's Starch

Staley's starches are made to your specific requirements.

Each formula is based on exact, scientific analysis of your individual production problems, by our technical and chemical engineering staff.

Equally advanced manufacturing facilities assure the precise maintenance of original quality in each shipment.

That is why Staley starches hold first place throughout the textile industry; why their record for results is unsurpassed.

You, too, can benefit by Staley methods. Our consulting staff is at your service.

A. E. STALEY MFG. CO.

DECATUR, ILLINOIS

G. A. Dean,
508 Andrews Law Bldg.
Spartanburg, S. C.

W. H. Randolph,
25 Church St.,
New York City

J. W. Pope,
Ansley Hotel,
Atlanta, Ga.

L. R. Dickinson,
88 Broad St.,
Boston, Mass.

FLETCHER

DEPENDABLE

EXTRACTORS

Vertical Motor Driven Extractor

Simplicity

Economy

Low Upkeep

Long Life

Other types are electric underdriven, belt driven, and steam turbine driven.

FLETCHER WORKS

Formerly SCHAUM & UHLINGER

Glenwood Avenue at Second Street,

PHILADELPHIA, U. S. A.

Southern Rep.—W. A. KENNEDY, Charlotte, N. C.

Rohm & Haas Company Inc.

Manufacturers of

CHEMICALS

PHILADELPHIA, PA. BRISTOL, PA.

SODIUM HYDROSULPHITE—
Sulphoxylates and Allied Products.

LYKOPON—Sodium Hydrosulphite—
For reducing Indigo and vat dyes. Of highest quality and absolutely standard.

FORMOPON—For discharging.

FORMOPON EXTRA—For stripping.

PROTOLIN—For stripping.

INDOPON W—Indigo Discharge Assistant.

TARTAR EMETIC—Technical.

Represented by

The MAKENWORTH COMPANY
Greensboro, North Carolina

Chas. Lennig & Company

Incorporated

40 North Front Street Philadelphia, Pa.
Works: Bridesburg, Philadelphia, Pa.

Manufacturers of

Concentrated Sodium Sulphide
Crystal Sodium Sulphide

Also manufacturers of the following chemicals:

ALUM	GLAUBER SALT
SULPHATE OF ALUMINA— Iron Free	OIL OF VITRIOL
	NITRIC ACID
PAPER MAKERS' ALUM	MURIATIC ACID
WATER FILTRATION ALUM	NITRATE OF LEAD

Represented by

The MAKENWORTH COMPANY
Greensboro, North Carolina

THE soft texture of the fabric, the clean, bright color, the loftiness and tensile strength are potent arguments for the use of

Wyandotte Textile Soda
Wyandotte Concentrated Ash
Wyandotte Kier Boiling Special

in the textile mill.

Ask your supply man.

The J. B. FORD CO., Sole Mnfrs.
WYANDOTTE, MICH.

Uniform in Application

VICTROLYN

Penetrating, Lubricating, Dependable Assistant in Warp Sizing

KLORASENE

will remove Oil Stains.

If you are troubled, write us.

BOSSON & LANE

Manufacturing Chemists

ATLANTIC, . MASS.

Douglas Crown Starch

A thin boiling starch for sizing yarns and fabrics

Free from all impurities and foreign material, Douglas Crown Starch is especially adapted for sizing yarns and fabrics. It is a refined, thin boiling starch—essentially the most perfect textile starch made.

Backed by years of successful use. You will appreciate its superior working quality.

In addition to Douglas Crown, we manufacture a full line of starches. All made by our special process.

Our representative will promptly supply samples and full information. Write to

PENICK & FORD, Ltd., Inc.
Manufacturers of Corn Products
CEDAR RAPIDS, Iowa
or to any of the following offices

New Orleans, La.	*Southern Representative*	*N. E. Representative*
Montgomery, Ala.	G. L. Morrison	Marble-Nye & Co.
New York, N. Y.	Greenville, S. C.	Boston and Worcester, Mass.

"BRETON" MINEROL "F"

For Cotton Piece Goods

"It gives a softer finish"

BORNE, SCRYMSER CO.
Established 1874
17 Battery Place, NEW YORK
BOSTON PHILADELPHIA
Works: Elizabethport, N. J.

Established 1815

ARNOLD, HOFFMAN & CO., Inc.

Providence New York Boston Philadelphia Charlotte

All Kinds of
HEAVY CHEMICALS
Sole Agents for
BELLE ALKALI CO.
of Belle, W. Va.
Manufacturers of
LIQUID CHLORINE
BLEACHING POWDER
CAUSTIC SODA
Solid and Flaked

We solicit your inquiry for prompt or future delivery

Diazo Fast Blues

Fastness to washing
Fastness to light
Fastness to atmospheric influence
---are the important, sought-for features of our new Diazo line of dyes.

Diazo Fast Blue BBW
Diazo Fast Blue RW
Diazo Fast Blue 2 RW
Diazo Fast Blue 6 GW
Diazo Fast Blue 4 GW
Diazo Fast Blue 2 GL
Diazo Fast Blue BW
Diazo Fast Blue BRW
Diazo Fast Blue 4 RW

All these dyestuffs are dyed in the same manner with Glauber's Salt Diazotized and developed with Beta Naphthol.

Dyers seeking fast light blue and deep navy shades will find Diazo Fast Blues especially suitable for the dyeing of loose cotton and yarn, either in hank, cops or cheeses.

As they are readily dischargeable with Hydrosulphite we highly recommend them to the Calico printer.

Sole Representative in the United States
for the
SOCIETY OF CHEMICAL INDUSTRY
IN BASLE
Basle, Switzerland.

Sole Selling Agents for Dow's Indigo and Midland Vat Blues.

iba Co. Inc.
BOSTON BRANCHES PROVIDENCE
PHILADELPHIA
COLUMBUS, GA.
CEDAR and WASHINGTON STS.
NEW YORK

"ARTCO" SILK OIL

for

use on Artificial Silk

Hosiery and Sweater Knitters find "ARTCO" Silk Oil to be the best product for this purpose.

Prevents waste and saves time

Softens the Thread and lays the Fibre, and produces a Fine Lustre.

Samples and full information on request.

Manufactured only
by

QUAKER CITY CHEMICAL COMPANY
Broad and Lehigh Ave.
Philadelphia

FOR that silky, soft "kid glovey" finish on fine shirtings, sheer nainsooks, dainty organdies, and voiles, on high grade ginghams and sateens, use

CREAM SOFTENER J. B.

White goods stay white and even the most delicate shades are not affected by this creamy, white softener.

A finish cannot always be judged satisfactory immediately after it is applied. Father Time, the most critical judge, often makes an adverse decision after the goods have been on the shelf a few months.

Our Cream Softener J. B. is especially adjusted and standardized to cope with atmospheric, storage and other conditions to which material is subjected after finishing.

We guarantee this softener will not cause any regrets. The first and last decision will be favorable.

Allow us to send samples.
The product will prove itself.

JACQUES WOLF & CO.
PASSAIC, N. J.

No one ever orders
QUALITY DYES
by mistake

ESTABLISHED 1830
CHEMICALS
ZINC
GRASSELLI
EXPLOSIVES
DYESTUFFS

SAVOGRAN

Never Try—Never Know

You Don't Experiment
When You Deal with Experience
"ASK YOUR SUPPLY HOUSE"

India Alkali Works, Boston

"Upon TRIFLES

the Best Gifts of the Gods Often Hang"—Andrew Carnegie

Whether or not you secure an interview often hangs upon a trifle—the impression a prospect gets of you from your card.

Why risk the loss of an interview—a possible sale—by using a business card that is not the very best?

Turn more of your calls into *interviews* with Wiggins Book Form Cards. They make an impression—because they have that distinctiveness, that superior richness, which only the work of master engravers can give to your card.

No waste to Wiggins Cards, they are protected by tissue. They're always fresh and white, and detach with a smooth straight edge from handsome leather booklets.

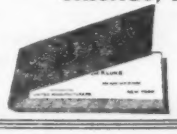
Write today for specimen pad and information.

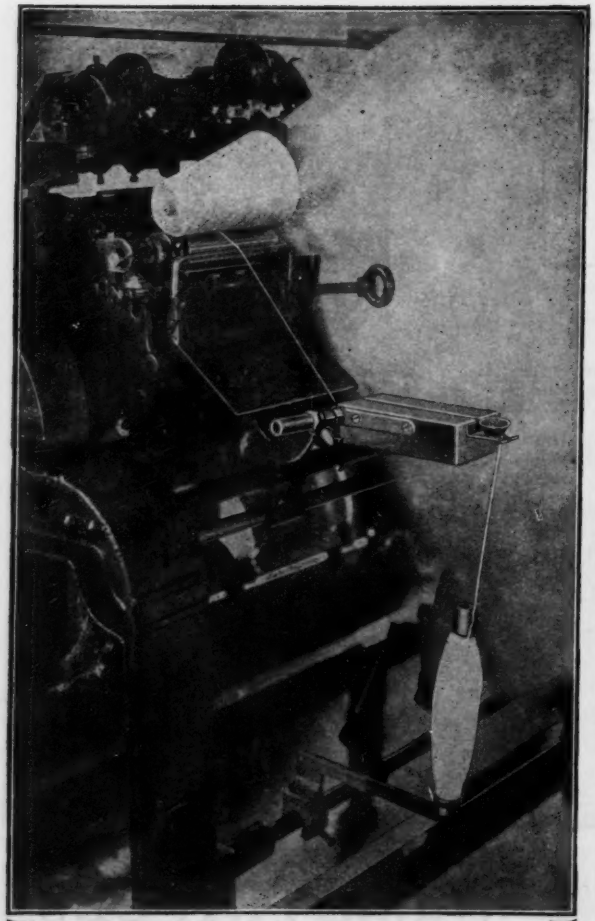
THE JOHN B. WIGGINS CO.

Established 1857

1110 So. WABASH AVE. CHICAGO, ILL.

WIGGINS
Peerless Book Form CARDS





Cleans the Yarn

and Cleans it Clean

The ECLIPSE Automatic Yarn Cleaner cleans the yarn clean, automatically removes dirt, sand, slugs, bunches and all foreign matter. Threads instantly and easily.

The ECLIPSE Automatic Yarn Cleaner involves a new principle, tried and proven, whereby the yarn is cleaned by flexible blades which constantly vibrate.

It is proving highly satisfactory in mills all over the country. Have you investigated the ECLIPSE?

Let us have your inquiry for full details. When writing, state make of spooler or winder.

ECLIPSE TEXTILE DEVICES, INC.
ELMIRA, N. Y.

Makers of
Automatic Yarn Cleaner Automatic Stop Motion
Yarn Tension Device

ECLIPSE

AUTOMATIC YARN CLEANER

PERKINS PRACTICAL BRUSH
ATLANTA BRUSH COMPANY

Quality, Satisfaction Assured

The trademark "Perkins Practical Brush" on a Textile Brush is like the stamp of sterling on silver. It leaves no room for doubt of quality.

Satisfaction is built carefully into Perkins Practical Brushes but even that is not left to chance. For every Perkins Practical Brush is *guaranteed* to give the satisfaction **you** expect of it or we will make any adjustment **you** desire.

It was the "Perkins Practical Trade Mark" and the guarantee behind it that standardized Textile Brush Buying in the South.

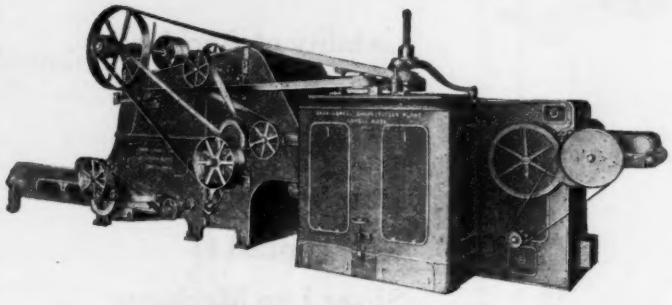
ATLANTA BRUSH CO.
ATLANTA, GA.

ATLANTA BRUSH COMPANY
A Brush for every Textile Need

SACO-LOWELL SHOP
TEXTILE MACHINERY

INCLUDING

OPENING, CONVEYING AND DISTRIBUTING EQUIPMENT



VERTICAL OPENER COMBINATION

Proper opening and mixing of the cotton increases production and enhances quality. The installation of the equipment illustrated contributes largely to the securing of such results.

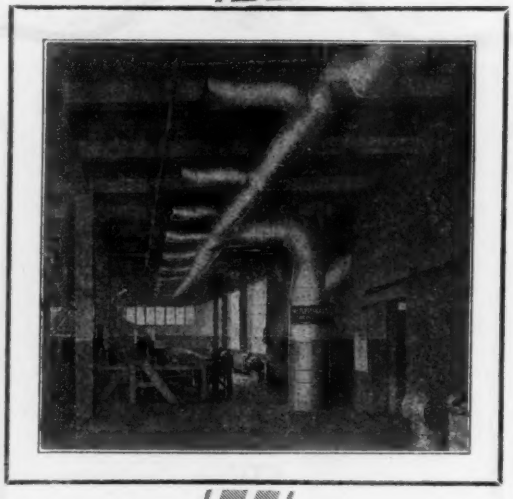
SHOPS AT

LOWELL, MASS. NEWTON UPPER FALLS, MASS. PAWTUCKET, R. I. BIDDEFORD, ME.

Executive Offices, BOSTON, MASS.

ROGERS W. DAVIS, Southern Agent, CHARLOTTE, N. C.

Southern Branch Office, GREENVILLE, S. C.



Engineering

Placing your problems in the hands of this organization, gives you the benefit of all the experience of the foremost engineers in the country on air conditioning systems.

These specialists who are nationally known and recognized, have made air conditioning their life study.

They will be glad to refer you to an installation near you or give you the names of concerns in your own business who have successfully installed our air conditioning systems. You may then get in touch and understand why Sturtevant-Fleisher Systems are preferred.

Whatever your problems or conditions, these engineers who have installed hundreds of systems all over the country, will be glad to cooperate with you.

Atlanta, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Hartford, Los Angeles, Minneapolis, New York, Philadelphia, Pittsburgh, Portland, Washington, Rochester, St. Louis, Salt Lake City, San Francisco, Seattle

Sturtevant
PUTS AIR TO WORK
HYDE PARK, BOSTON, MASS.

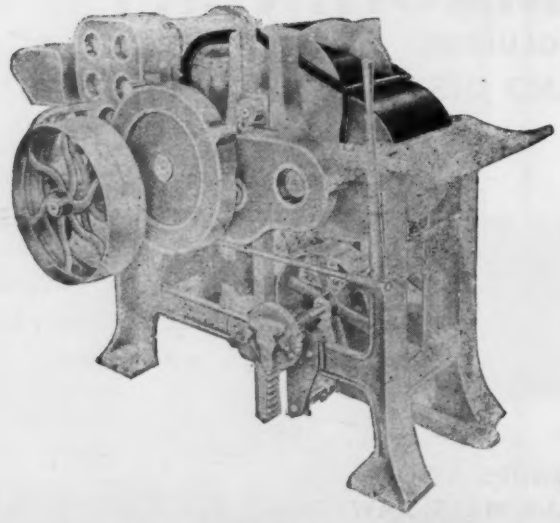
W. L. FLEISHER & CO., Inc.
31 Union Square West
New York, N. Y.

727

WHITIN MACHINE WORKS

ESTABLISHED 1831

TEXTILE MACHINERY



"SAFETY FIRST"

Liability of Accident
is Eliminated
by the use of the
Whitin Patented Guard
applied to
Sliver Lap Machines

Descriptive Circular on Request

MAIN OFFICE AND WORKS

WHITINSVILLE, MASS., U.S.A.

SOUTHERN OFFICE CHARLOTTE N.C.

THE

"Southwestern" Iron Clad

Is the IDEAL Cotton Mill Broom

Only the best grade of broom corn is used in these brooms—they are built strong and will withstand the hardest usage.

The light weight, yet strong and substantial shields used gives the broom ample protection and at the same time allows the proper amount of broom corn to be used, thus giving them excellent sweeping qualities.

MADE RIGHT!
PRICED RIGHT!

Inquiries and orders receive prompt attention.
Sold direct and through
all principal distributors.

The Southwestern Broom Mfg. Co.
Evansville, Indiana

AMERICAN

SUPPLY COMPANY

PROVIDENCE, R. I.

Manufacturers of

LOOM HARNESS,
WEAVING REEDS,
OAK TANNED LEATHER
BELTING, STRAPPING,
ETC.

We make a specialty of Harness for Warp Drawing Machines

Number 20

RE-FIL-IT TEXTILE SPECIAL

Aluminum Holder Corn Filler

Advantages of the Textile Special

1st. Loose corn from this brush is reduced to a minimum, making the waste more valuable.

2nd. It sweeps cleaner than the regular broom.

3rd. It is much faster than the old method, of sweeping, particularly in the spinning room.

4th. Fanning is unnecessary by this method, and the liability of lint getting into the thread is reduced to the minimum.

5th. Preference for the Textile Special is shown by the sweepers when they realize how much faster and easier it is than the old method.

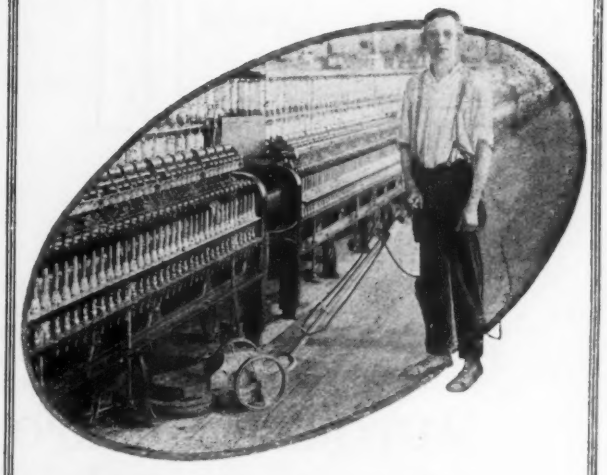
6th. One holder will outwear many sets of fillers, and the savings in broom cost, during a period of six months or a year is very large.

Please write us for prices and full particulars.

Yours for Economy,

RE-FIL-IT BROOM MFG. COMPANY
185 Devonshire Street Boston, Mass.

Electric Scrubbing!



The Modern Way to keep Mills Clean

Investigate *electric* scrubbing, the easier, better, modern way to scrub floors. Learn what it can do in your mill.

Three hundred mills have already adopted it in the Finnell System and made their mills cleaner and their employees healthier, happier, better workers.

FINNELL Equipment saves scrubbing labor, reduces waste, soilage and accidents and helps make better working conditions,

Write today for complete illustrated folder on this necessary equipment. State amount of floor space you use. There is an economical size for any size mill.

Now Ready! Motion pictures of Finnell Machines in operation in textile mills. One of our experts will be glad to bring his projector to your mill and give you a private showing. No obligation. Write.

AMERICAN SCRUBBING EQUIPMENT SALES COMPANY

General Offices and Factories

57 COLLIER ST. HANNIBAL, MO.

District Offices in Principal Cities

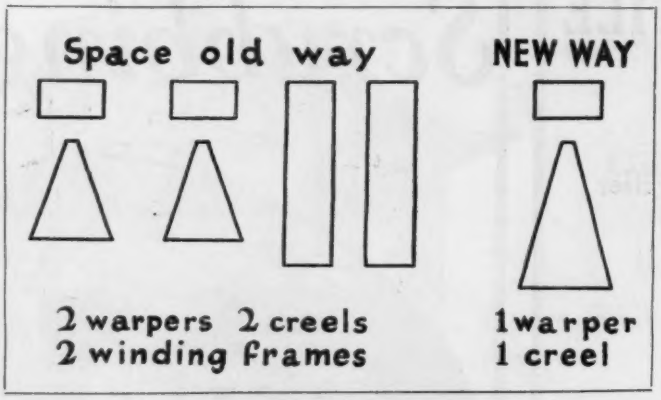
FINNELL SYSTEM

OF ELECTRIC SCRUBBING

"Clean Floors Reflect Clean Business"

NEW AUTOMATIC CREEL

for direct warping from FILLING WOUND BOBBINS



COMPLETELY ELIMINATES the

Spooling of the yarn

Spooling waste

Undue and irregular tension of yarn due to spooling

Stoppage for doffing

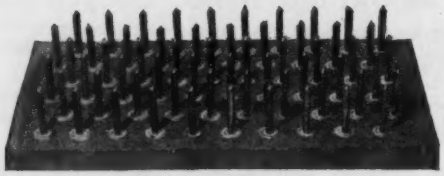
Doffing is done while warper is running.
Greater production from better warps at lower cost.
Better loomage from auto-creel warps because
Elasticity is preserved in yarn.

For Information address

AUTO CREEL CORPORATION, NEW YORK

Room 915, Fifth Ave. Building
Alfred Suter, Sales Manager

KORE-LOKT
REG. U. S. PAT. OFFICE
PIN BOARDS



Patent Rights Pending

Are You Responsible

for good weaving in your mill? If so, you should know Kore-Lokt Pin Boards and the story of their usefulness in modern loom equipment.

Expert Opinion from men in charge of the weave rooms in prominent mills is available to superintendents and overseers upon request.

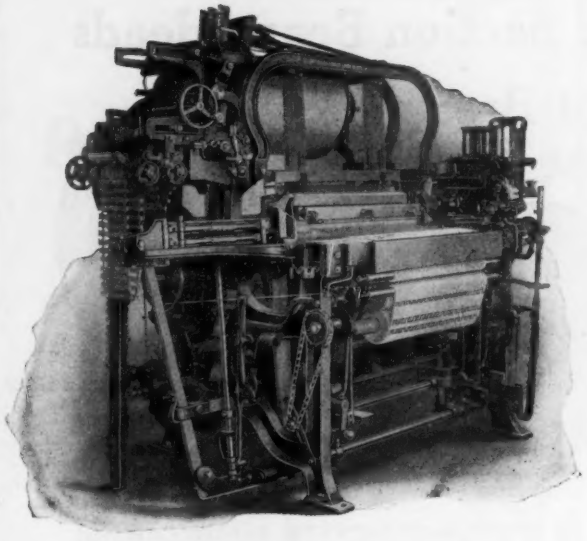
Send for this information so you may know the merits of Washburn Kore-Lokt Pin Boards as an improvement over old style Filling Boxes. Learn how the other fellow checks up results from the "Build of Bobbins."

NEW BEDFORD, MASS.

PERFECTION SHELL ROLLS

FOR
BLEACHERIES
BALL WARPING
FINISHING PLANTS
CORD FABRIC SHIPMENTS

NEW BEDFORD, MASS.



AUTOMATIC TERRY TOWEL LOOM

Built for Under Cam,
Jacquard
or
Dobby Harness Motion

CROMPTON & KNOWLES LOOM WORKS

WORCESTER, MASS.

PROVIDENCE, R.I. PHILADELPHIA, PA. PATERSON, N. J.
ALEXANDER & GARSED, CHARLOTTE, N. C.
Southern Representatives

Avoid First-Cost Pitfalls

Buy the best, it is cheapest. We freely admit that you will pay a little more in first cost of our shuttles; in final cost, however, you will save many dollars. The wear and tear that you should get cannot be had from a cheaply made article. Reduce your shuttle investment. Get the satisfaction that comes when you know you have the very best that can be bought. Any shuttle troubles? Then write.

THE J. H. WILLIAMS COMPANY

"THE SHUTTLE PEOPLE"

MILLBURY, MASS.

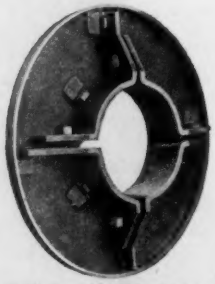
Geo. F. Bahan, Southern Representative

All Steel Loom and Section Beam Heads

Cannot Break
Do not Bend

"ALL STEEL" LOOM BEAM HEAD
"MALLEABLE" GEAR
Patent Pending

"ALL STEEL" SECTION BEAM HEAD
PATENTED



"ALL STEEL" ADJUSTABLE HEAD
SPLIT OR SOLID TYPE
PATENT PENDING

DUPLICATE YOUR CAST IRON HEAD IN STEEL — ELIMINATE ALL BREAKAGE
MAKE YOUR BEAM HEAD INVESTMENT PERMANENT

Mossberg Pressed Steel Corporation

Attleboro, Mass.

SOUTHERN OFFICE 201 AUGUSTA ST. GREENVILLE, S. C.

SCOTT TESTERS

THE SCOTT HORIZONTAL 800 LBS. CAPACITY—
INCLINABLE BALANCE FABRIC TESTER

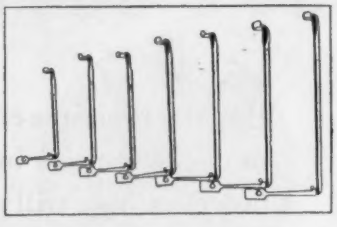
An American Invention, Built in America by Skilled American Mechanics and adopted as the Standard for testing all heavy fabrics for American requirements.

We also build the Standard Testing Machines for Light Fabrics, Yarns, etc.

HENRY L. SCOTT & CO.

BLACKSTONE & CULVER STS., PROVIDENCE, R. I.

Made in the South by the Only Factory in the South Specializing in



THREE REASONS FOR
THEIR HIGH QUALITY

PROPER DESIGN
GREAT STRENGTH
LASTING SMOOTHNESS

THEN TOO

The curls of every FLYER PRESSER is filed and fitted to a Presser before leaving our factory. This eliminates fitting at the mill.

We duplicate any sample PRESSER submitted. Estimates Furnished.

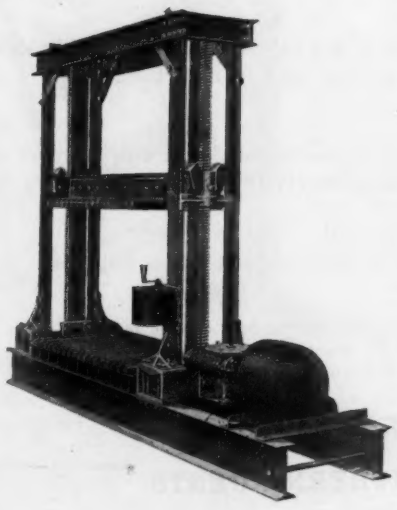
Southern Spindle & Flyer Co., Inc.

Charlotte, North Carolina

W. H. MONTY, President and Treasurer
W. H. HUTCHINS, Vice-President and Secretary

Another

REX PRESS



New Cloth Press

Speed, Strength, Simplicity

Built any size and pressure.

The Rex Creed

To build a press so good that the simple truth about it will be adequate recommendation and to price it so fairly that its value can never be questioned.

Watch for the Yarn Press.

REX ENGINEERING CORPORATION

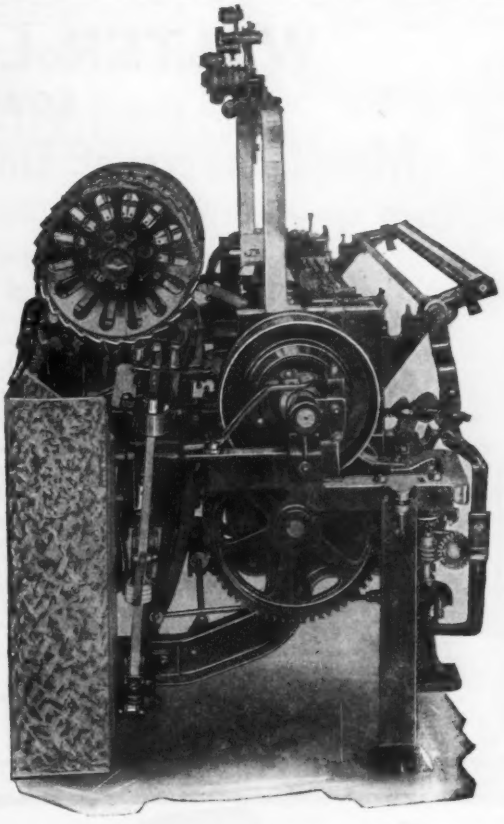
Dunkirk, N. Y.

J. S. HULME

Southern Representative

Atlanta Trust Co., Bldg.

ATLANTA, GA.



The Latest

NORDRAY

Automatic Loom

Multiple-harnesss, Feeler type

built by

HOPEDALE MANUFACTURING CO.

at MILFORD, MASS.

SOUTHERN OFFICE at GREENVILLE, S. C.

This loom was shown at the Late Greenville Exposition and excited great interest.

It is Still the Simplest.

WALTER L. PARKER CO.

LOWELL, MASS.

Manufacturers of Bobbins, Spools and Skewers

OUR SPOOLS:—

Are made to stand severe service and are made from thoroughly dried stock, so constructed that they are giving entire satisfaction.

OUR BOBBINS:—

Are made from the best grade of stock, and through the efficiency of our workmanship, are true running, and properly fitted on spindles.

OUR PRODUCTS:—

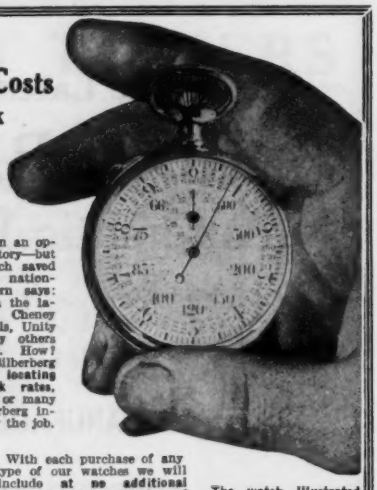
Bobbins—Warp and Filling. We put on all kinds of metal shields and caps.
Speeders—Plain; steel rings; metal base.
Spools—Warper; Twister.
Our Metal Bound Spools are pronounced the best on the market.
Skewers—Cop, Warper and Roving, of all descriptions.
Twisters—Universal Winder Rolls and Bobbins, Comber Rolls, etc.

We Specialize in New Mill Equipment

CHARLOTTE SUPPLY CO., SOUTHERN AGENTS.

Obtain Standardized Costs Set Piece Work Rates

Here's the Watch for Every Textile Time Study Job



Only six seconds waste on an operation in an eastern factory—but locating it with this watch saved thousands every year. A nationally known Textile concern says: "We eliminated one-fourth the labor, cut costs by 23%." Cheney Bros., Champlain Silk Mills, Unity Spinning Mills and many others are doing the same thing. How? By Time Studies with Silberberg watches. Whether it's locating wastes, setting piece work rates, establishing bonus systems or many other uses—there's a Silberberg instrument specially made for the job.

The Decimal Duration Watch—Gives production figures up to three minute jobs with special arrangements for timing jobs up to 30 minutes. It also has the decimal dial and "take out time" feature.

With each purchase of any type of our watches we will include at no additional charge one set consisting of our 3 Text Lesson Course on "TIME AND MOTION STUDY" including how to set Piece Work Rates and how to obtain accurate Labor Costs. All data contained therein broadens the scope and use of Time Study Watches in the Industries.

This course regularly sells for $10.00. Absolutely FREE with each Watch. Send for illustrated pamphlets and catalogues. Any of our instruments on approval to responsible concerns.

MORTIMER J. SILBERBERG CO.
Peoples Gas Bldg.
CHICAGO
Pioneers in the Manufacture and Sale of Time Study Watches.

The watch illustrated at the top with the decimal dial and "take out time" features give direct reading in production per hour up to one minute jobs.

The Master Chronograph

Cost

may be a primary consideration

The Liberty Knotter

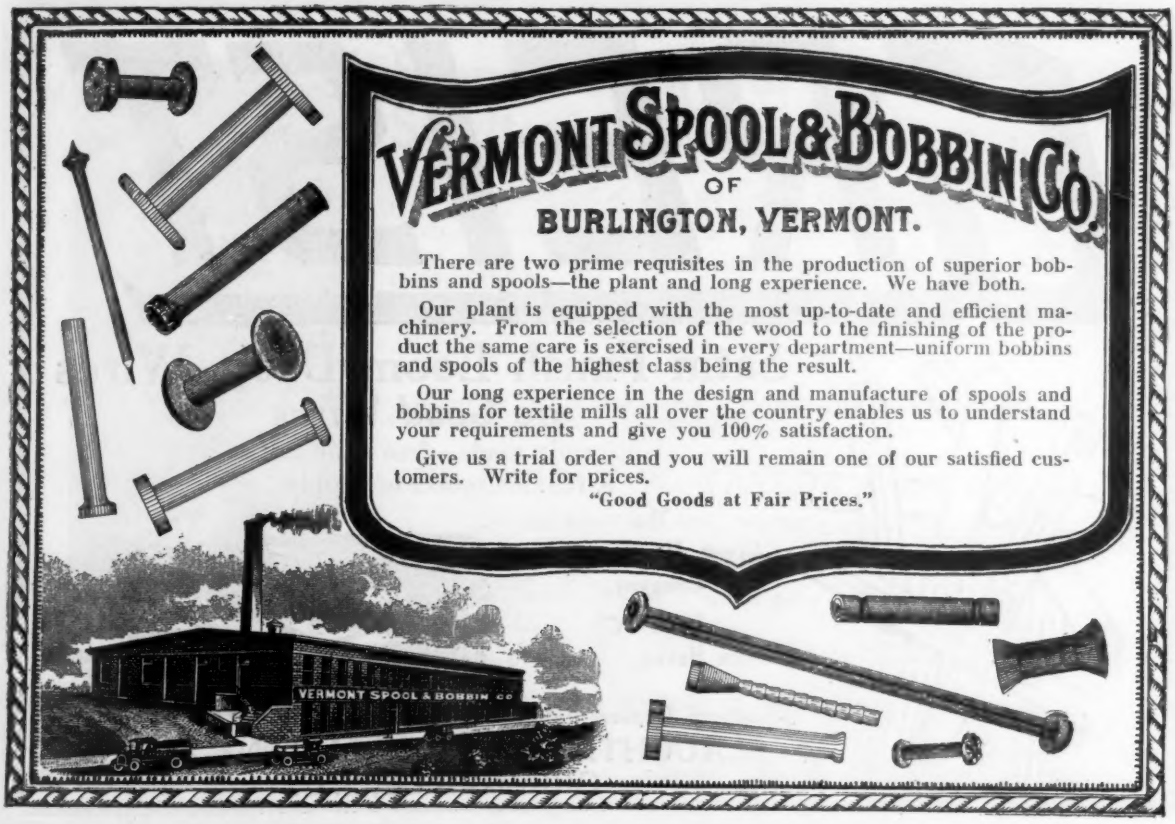
not only fills the requirements of low first cost but is most simple in construction and economical in upkeep and operation. Give it a trial.

Guaranteed for one year
Write for information

A. B. CARTER, Sales Agent,

Gastonia, N.C.

Mill Devices Co. Durham, N. C.


VERMONT SPOOL & BOBBIN CO.
OF
BURLINGTON, VERMONT.
There are two prime requisites in the production of superior bobbins and spools—the plant and long experience. We have both.
Our plant is equipped with the most up-to-date and efficient machinery. From the selection of the wood to the finishing of the product the same care is exercised in every department—uniform bobbins and spools of the highest class being the result.
Our long experience in the design and manufacture of spools and bobbins for textile mills all over the country enables us to understand your requirements and give you 100% satisfaction.
Give us a trial order and you will remain one of our satisfied customers. Write for prices.
"Good Goods at Fair Prices."
VERMONT SPOOL & BOBBIN CO.

What Part of the Spool is First to Wear Out?

Your superintendent will confirm our statement that 99% of all Warper, Twister or Spooler Spools become useless on account of the heads breaking, wearing rough or loosening. This is true of all types of Spools heretofore on the market.

With the Lestershire Type Vulcanized Fibre Head Spools just the opposite is true. The Heads will outwear the barrels because Hard Vulcanized Fibre (the same material from which end thrust bearings and automobile gears are made) will never break, wear rough nor splinter.

Of course the first cost is higher but, figuring your charges per thousand spools per year, they are by far the most economical spools on the market today.

In addition Lestershire Fibre Head Spools will in the ordinary mill give you an increased unloading production of nearly 50%. Put a row on your creel and compare the time necessary to unload with any other type Spool.

On the smooth Rock Maple barrel, cleanly jointed to the Fibre Heads which cannot get rough and cannot be dented, there is no place for the yarn to catch.

Spindle wear is also eliminated by bushings of hard well seasoned Dogwood.

Increased traverse can be had which will give you greater yardage on your spools. This means a saving of many dollars in the course of a year, not only direct but in labor required to change the spools.

At your request we will gladly send samples for purposes of test and comparison.

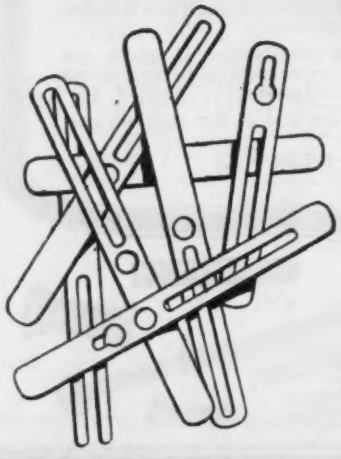
LESTERSHIRE SPOOL & MFG. CO.

Manufacturers Mill Spools, and Bobbins, of Every Description

General Offices and Factory
JOHNSON CITY, N. Y.

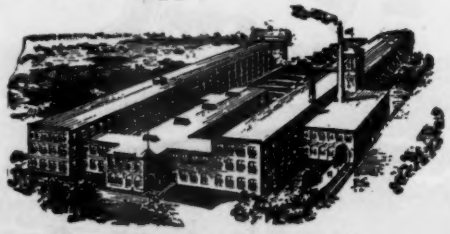
Southern Branch Office:
32 So. Church St.,
CHARLOTTE, N. C.

GREIST



Satin Finish Loom Drop Wires
are *Good Wires*

Uniformly made—free from burrs.
A reliable source of supply.



The
Greist Manufacturing
Company,
Dept. "C"
New Haven, Conn.

Southern Representative
SLAUGHTER-McCABE COMPANY, INC.
GREENVILLE, S. C.

SPINNING RING SPECIALISTS
1873 – FOR FIFTY YEARS – 1923

SPINNING RINGS
TWISTER RINGS
SILK RINGS

DIAMOND FINISH
TRAVELLER CLEANERS
TRAVELLER CUPS
GUIDE WIRE SETS

WHITINSVILLE SPINNING RING CO.
WHITINSVILLE, MASS.

No. 570-A

Prepare Now For Those Sweltering Days of Summer

When those torrid summer days come, the fatigued mind and body of your employees must be frequently refreshed with cool, palatable, pure water. Neglect here is costly.

Actual tests by the largest corporations of the country have shown that HALSEY TAYLOR Cooler Fountains earn their cost within the first few months.

The HALSEY TAYLOR Cooler Fountain is the only one with satisfactory automatic control of the height of the stream and the practical drinking mound.

Write today for 32-page catalog of fountains for factories, schools, public buildings, parks, playgrounds, etc.

THE HALSEY W. TAYLOR COMPANY

No. 525 PARK AVE., WARREN, OHIO

BRANCHES

NEW YORK CITY
210 East 45th Street
PHILADELPHIA
5224 Greene Street
BOSTON
46 Cornhill, Room 512
ATLANTA
322 N. Jackson Street
CHICAGO
1702 N. Talman Ave.
KANSAS CITY
202 Baltimore Bldg.
DENVER
401 Jacobson Bldg.
SAN FRANCISCO
237 Rialto Bldg.

HALSEY TAYLOR

SMITH'S BETTER 100% BASKET

TRADE MARK

The Basket You Can Renew—

When the canvas wears out, all you have to do is remove the demountable rim and slip on a new Smith quality canvas container. Two-thirds of the original cost of the basket is saved.

The Smith Basket we honestly believe is the 100% better basket and we have so named it. The steel frame is indestructible—high point carbon flat steel being used with round edges. This frame is firmly clamped and fitted into the highest grade hardwood skids with cross slats, which can also be renewed should it become necessary.

It's a basket that lasts—and after lasting a lifetime the canvas can be renewed.

A trial will convince you.
Order one or more today.

SMITH MANUFACTURING CO.

DALTON, GA.

Leading cotton and silk mills order Lewis Box Trucks and Shipping Boxes

For their remarkable durability in hard service—for their aid in cutting production costs and making it easier to handle delicate fabrics—Lewis Box Trucks and Shipping Boxes are in demand by leading textile mills everywhere, including these typical users:

Holeproof Hosiery Co., Milwaukee, Wis.
Durham Hosiery Mills, Inc., Durham, N. C.
Vesta Underwear Co., Providence, R. I.
Crane Bros., Kingston, Pa.
Francis Willey & Son, Boston, Mass.

This recognized superiority of the Lewis line comes of 30 years experience in weaving wood and wire into the most durable containers and those that give lowest final cost. Write us regarding Lewis containers and the newest ideas for handling textiles in process and in shipment.

G. B. LEWIS COMPANY

WATERTOWN DEPT. C-6 WISCONSIN

Save one-third the freight cost by having them shipped knocked down.

An Ever
Increasing Demand
For
"AMTEX"
SPINNING, TWISTING AND SPOOLER TAPES
From
Southern Spinners
THE QUALITY AND PRICE RECOMMEND THEM
Manufactured by
AMERICAN TEXTILE BANDING CO., Inc.
GERMANTOWN, PHILADELPHIA, PENNA.
Sold in the South by
Charlotte Supply Co., Charlotte, N. C.
James Supply Co., Chattanooga, Tenn.
Montgomery & Crawford, Spartanburg, S. C.

REEDS

For Cotton, Woolen, Worsted, Silk, Tire Fabrics, Webbing, and Wire Cloth.

We make a specialty of all Metal reeds, for Tire Fabrics, and Leno work.

HAYES LOOM REED & HARNESS CO.
182 Farm St. Woonsocket, R. I.

TRADE MARK

LOWELL MILL CRAYONS

the original crayons for textile mill use, and for years the standard with America's leading mills.

Lowell Crayons are made in white and 15 colors, as follows:

1	2	3	4	5	6
Yellow	Red	Pink	Blue	Purple	Brown
7	8	9	10		11
Black	Green	Orange	Dark Green		Light Red
12	13	14	15		
Rose Pink	Light Green	Light Blue	Orange No. 2		Wh.

Order by number, please.

LOWELL CRAYON CO.
Lowell, Mass.

The Palmer Adjustable Thread Guide

For Ring Spinning and Twisting Frames

Easily Adjusted.

Extreme accuracy and permanence of setting.

Cheapest of them all.

Mail guide-block for free sample.

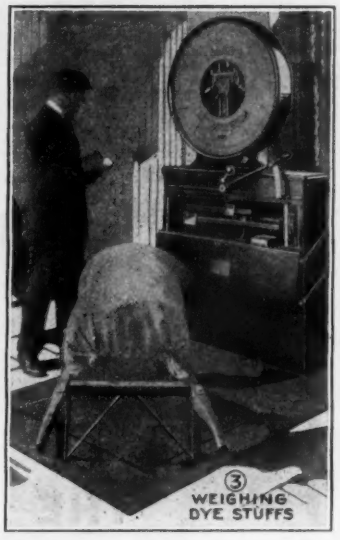
Patented and manufactured by

THE I. E. PALMER COMPANY
Middletown, - - - Connecticut

Automatic Scales

FOR
Weighing
OR
Checking

Raw Material
Sorts
Soap, Alakali and Dyes
Balls and Sliver
Test Pieces
Tops
Laps
Bobbins
Roving
Yarn
Yardage
Section Beams
Shipments
And for many other purposes.



Toledo Scale Company, Toledo, Ohio
Canadian Toledo Scale Co., Limited, Windsor, Ontario
Largest Automatic Scale Manufacturers in the World
106 Sales Rooms and Service Stations in the United States and Canada. Others in thirty-four foreign countries

MEECO

SANITARY
DRINKING
FOUNTAINS
are
ECONOMICAL
DURABLE
PRACTICAL
EFFICIENT

Low first cost and up-keep.

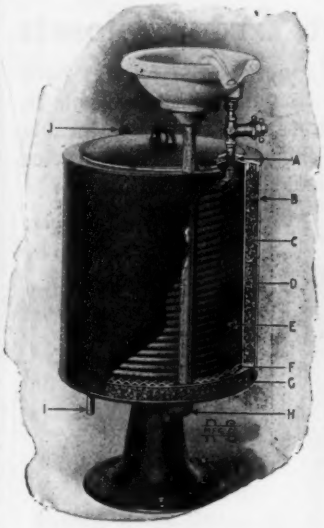
Write today for proof.

METAL MEECO PRODUCTS

ICE COOLED

MFG. EQUIPMENT & ENG. CO.
Originators and Largest Makers of Ice Cooled Drinking Fountains
FRAMINGHAM, MASS., U. S. A.

Another Way to Save Wasted Time



Think how much time one man can waste in frequent trips to a hydrant or pail for drinking water. Can you afford to lose this much of their time and efforts when

RUNDLE - SPENCE "VERTICO-SLANT" Fountains

will bring cold, invigorating drinks to every worker AT HIS JOB! Install them throughout your mill—the investment is small compared to the saving in time and efficiency.

Note the sanitary features of the R. & S. Fountain. The stream is thrown at an angle, preventing germ-laden water from falling into the jet. LIPS CANNOT TOUCH THE NOZZLE. Don't delay—send for our new 73-page catalog. There's an R. & S. Fountain for every mill and office use.

Rundle-Spence Mfg. Co.
Milwaukee, Wis.
Leaders in Plumbing Equipment Since 1871

MR. MILL OWNER

The work of your COMMUNITY WELFARE DEPARTMENT can be materially advanced by the installation of an

EL-FLO No. 150 Community Canning Outfit

At this season of the year when the gardens are producing a surplus of vegetables and fruit in abundance is on the market, why not educate your employees to save this surplus—by canning—for winter use?

Let Us Send You Our Booklet TELLING HOW—IT'S FREE.

HOME CANNER MFG. CO.
HICKORY NORTH CAROLINA

It's Easier To Make Friends Than To Keep Them

Some people attract friends easily and lose them quickly. It's the same with typewriters. Some look attractive but they don't wear.

THE L. C. SMITH & BROS. TYPEWRITER binds its friends by chains of service. It gives lasting satisfaction and makes lasting friends.

Send for booklet.

L. C. Smith & Bros. Typewriter Co.
Executive Offices :: :: SYRACUSE, N. Y.

PRINTING

WE do it for some of the largest mills in the South—*Why not for yours?*

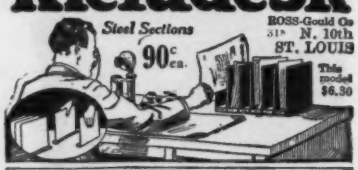
If our prices and service were not right, we could not do it.

THE A. J. SHOWALTER COMPANY
Dalton, Georgia.

Send for FREE story

Interesting, illustrated folder "How to get Greater Desk Efficiency" shows how to keep your desk cleared for action. Thousands of Kleradesks are giving entire satisfaction. Saves time locating, distributing or sorting papers. Takes less space than a tray. Sent FREE trial.

Kleradesk



Mailing Lists
Will help you increase sales
Send for FREE catalog showing details covering names of your best prospective customers. Counts and prices are given on thousands of different Mailing Lists.
99% Guaranteed by refund of 5¢ each
ROSS-Gould Co 318 10th Street St. Louis

VOGEL
PATENTED

Frost Proof Closets

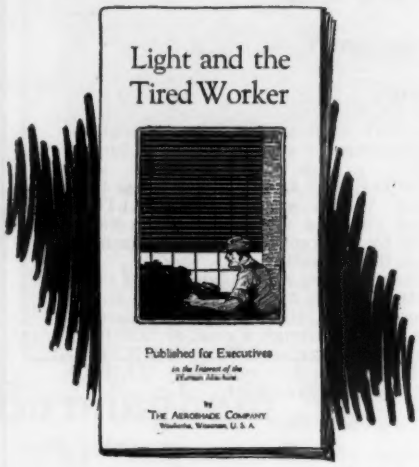
350,000 giving satisfaction. Save Water; Require no Pit; Simple in the extreme. The most durable water closet made. In service winter and summer.

- Enameled Roll flushing rim bowls.
- Heavy brass valves.
- Strong hardwood seat.
- Galvanized tank.
- Malleable seat castings will not break.
- Tested under hydraulic pressure before leaving factory.

ASK YOUR JOBBER

JOSEPH A. VOGEL CO.
WILMINGTON
DELAWARE

"Light and the Tired Worker"



Send For This Free Booklet

FIND how light—perhaps the very light you use for work—may be sapping your energy, dulling your initiative and giving you a feeling of lassitude. Thousands of men never associate the "afternoon let-down" with the siesta of the tropics. They forget entirely that the glaring sun of Mexico is the sun that shines in at their windows.

No dull, meaningless statistics in "Light and the Tired Worker," but material right out of life. Once you read it, you'll agree that proper shading equipment like

AEROLUX
VENTILATING
WINDOW SHADES

—is just as important as lighting equipment. It conserves energy and enables employees to do more and better work.

Aerolux is the ideal economical shade. Perfect ventilation—Air Without Glare. Made of long strips of durable linden-wood, woven with hard-twist seine twine. Lasts for decades. Adaptable to any type sash.

Send for FREE BOOKLET, now. Learn how Aerolux will bring new working conditions to sunny plants that result in real improvement.

The Aeroshade Company

(Makers of the famous Aerolux Porch Shades for Residences, Country Clubs, etc.)

2400 Oakland Avenue, Waukesha, Wis.

Air Without Glare

Recently Lyon Standard Steel Shelving was installed at the Phoenix Hosiery Company, Milwaukee. Lyon Engineers designed the storage plan after thoroughly analyzing the conditions.

The installation proved so satisfactory that a duplicate arrangement was ordered.

Many million pairs of hosiery are stored here. Any size, color, or style of hose is almost instantly available.

The success of this installation is typical of the successes that have attended Lyon installations in the textile field.

No matter what your storage requirements may be, Lyon Engineers can develop for you a storage plan that will prove very satisfactory to you—and that can be added to without trouble when the need arises.

If you are interested in finding out how compactly and conveniently your store-rooms can be arranged, please write us at our general offices, or the district office nearest you. The services of Lyon Engineers are available without cost to you.

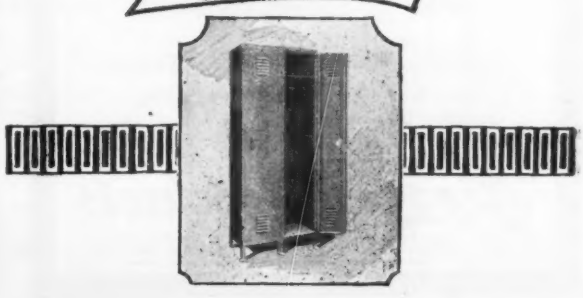
Lyon Metallic Manufacturing Company

Aurora, Illinois

Boston	Philadelphia	Indianapolis
New York	Pittsburgh	Chicago
Rochester	Detroit	Los Angeles
	Cleveland	

Authorized Agents in Other Principal Cities.

LYON
STEEL PRODUCTS



It's to YOUR ADVANTAGE to try

Zemco-lite

TRADE MARK

"The Cement Paint"

"ZEMCO-LITE," the Permanent WHITE Cement Paint, is rapidly finding favor in textile mills all over the country. Widespread recognition of the superiority of "ZEMCO-LITE" over ordinary oil paints has placed it in great demand.

The predominating quality of "ZEMCO-LITE" is its base of pure WHITE Portland Cement. "ZEMCO-LITE" sticks and stays—just like cement. Its whiteness is everlasting. Does not turn yellow, or chip, flake, peel, or blister as is common to paints mixed with oil. And here's a further saving: as "ZEMCO-LITE" is mixed with water, like cement, it saves the excessive cost of linseed oil or turpentine. It is impervious to steam, oil, acid fumes, water, etc.

Try "ZEMCO-LITE" in your mill. You take no chances. We know what "ZEMCO-LITE" can do for you and we want you to know and benefit by its great economy and unusual light refracting qualities.

We also manufacture a complete line of exterior paints for mill, mill village,—for wood, iron, stucco, brick, stone, etc. The hardest rain cannot beat through a coat of "ZEMCO-LITE"; in fact, water actually makes it harder. The hottest sun does not affect "ZEMCO-LITE" as it acts like cement.

Write us for color card and full details on "ZEMCO-LITE."

American Cement Paint Co.

Chattanooga, Tenn.

Cement For PERMANENCE—Why Not ZEMCO-LITE?

Air Conditioning Equipment

Heating, Ventilating and Humidifying apparatus for every requirement of the textile industry. Competent engineering service at your disposal.

Write for descriptive bulletins.

American Blower Company, Detroit

Branch Offices in all principal cities.
Canadian Sirocco Co., Ltd., Windsor, Ont.

(315)

"Sirocco" Products

BLOWERS · EXHAUSTERS · VENTILATING FANS · AIR WASHERS · ENGINES

FOR HEATING, VENTILATING, DRYING, AIR CONDITIONING, MECHANICAL DRAFT

"Dixie's Reliable Roofers"

For 42 years we have specialized in roofing mill buildings and structures of all kinds, large and small. "Done By Murphy" means satisfaction and economy, first and last. You will not regret calling on us for quotations on

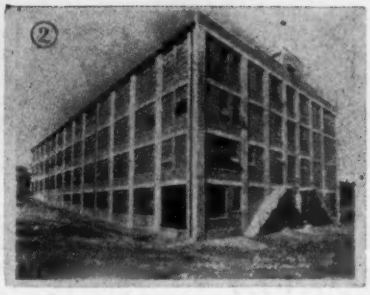
GRAVEL AND SLAG ROOFING
WATERPROOFING, INSULATED ROOFS
TAR CONCRETE FLOORS

Here's a few mills whose roofs are the product of "Dixie Reliable Roofers"

BIBB MFG. CO., PORTERDALE, GA. (OSPREY)
WINNSBORO MILLS, WINNSBORO, S. C.
COVINGTON COTTON MILLS, COVINGTON, GA.
MILL NO. 2 NEWNAN COTTON MILLS, NEWNAN, GA.
MILL NO. 1 ANCHOR DUCK MILLS, ROME, GA.
SCOTTDALE MILLS, SCOTTDALE, GA.
HILLSIDE COTTON MILLS, LAGRANGE, GA.
MILL NO. 1 AND 2, TALLADEGA MILLS, TALLADEGA, ALA.
ROYAL MILLS, CHARLESTON, S. C.

C. P. MURPHY'S SONS

ESTABLISHED 42 YEARS ATLANTA, GA.



The Couch Cotton Mills at East Point, Ga., erected in 1920 by Arthur Tufts Co. of Atlanta. One of many modern, reinforced concrete mill structures that owes its weather proof and fire resisting qualities to our especially prepared Blast Furnace Basic Slag.

"ENSLEY" & "ALA CITY"
BASIC SLAG
CRUSHED & SCREENED

In concrete our puddled and scientifically prepared Basic Slag provides a "coarse aggregate" that assures a building more nearly fire resistive, repair free and age proof than any other type of solid masonry construction.

The bond it forms with cement mortar grows stronger as it grows older. Result—a concrete that is highly resistive to temperature changes—a concrete that is practically everlasting. For better concrete — specify our puddled Basic Slag.

Birmingham Slag Co.

"Slag Headquarters for the South"

ATLANTA BIRMINGHAM THOMASVILLE

TUPELO

For TEXTILE MILL FLOORS especially, this "Hard-Wear" Lumber makes good always---and in

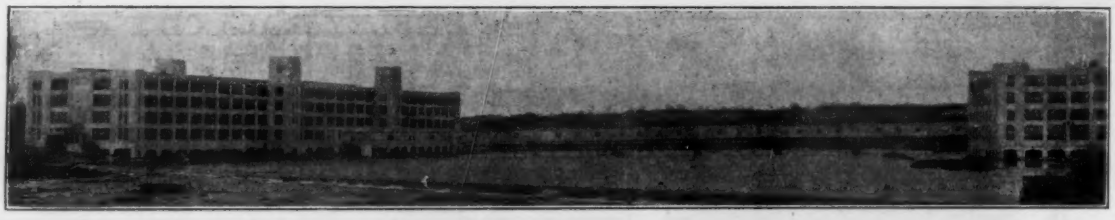
ALL-WAYS

Wheels and heels have the effect of making it smoother and solider and denser. That's "some" merit.

Get the complete facts about TUPELO before placing an order for Flooring for any use. They're interesting and convincing. Write.

Southern Cypress Manufacturers' Association

805 Poydras Building, New Orleans, La., or
805 Graham Building, Jacksonville, Fla.



The Largest Installation of Individual Loom Motors in the World.

The Riverside and Dan River Cotton Mills, Inc., at Danville, Va., is an institution of which the textile industry and the entire nation is justly proud. This mill was carefully planned to the last item of equipment and the selection of a competent and resourceful organization of electrical experts to look after the power end was an important question.

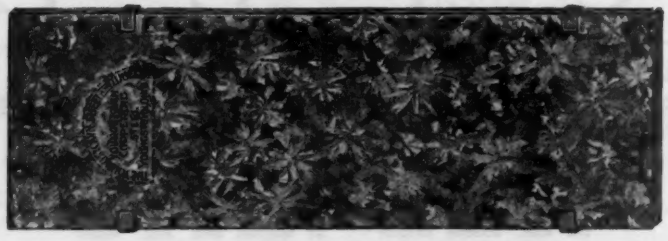
The natural selection was the Walker organization—an organization of highly skilled individuals and technical experts whose work is cited as examples of perfection by the leading architects and engineers. No matter how large or how small the installation, Walker service means not only perfect service and satisfaction, but economy initially and permanently.

Ask for the handsome Walker book.

WALKER ELECTRIC & PLUMBING CO
ATLANTA, GEORGIA.

Branch Offices at Convenient Points Throughout the South

Youngstown Sheets and Plates



Our facilities for the production of Sheets and Plates are unexcelled, covering almost every kind, size and gauge made in this country.

We are particularly well equipped for the manufacture of Blue Annealed Single-pickled and Galvanized Sheets.

The product of our Forty-two Sheet Mills includes Sheets rolled from genuine Double-refined Hand Puddled Iron, Bessemer Steel, Open-hearth Steel, and Youngstown Copperoid Steel.

Youngstown Sheets will be found of Uniform High Quality, accurately Rolled, accurately Sheared, and Superior in every way.

The Youngstown Sheet & Tube Company
Youngstown, Ohio

District Sales Offices:

BOSTON—120 Franklin St.
NEW YORK—30 Church St.
PHILADELPHIA—Pennsylvania Bldg.
ATLANTA—Healey Bldg.
PITTSBURGH—Oliver Bldg.
CLEVELAND—1038-1040 Hanna Bldg.
DETROIT—2021-2022 First Nat'l. Bank Bldg.
CHICAGO—McCormick Bldg.
ST. LOUIS—1139 Olive St.
DENVER—First Nat'l Bank Bldg.
DALLAS—1401-3 Magnolia Bldg.
SAN FRANCISCO—604 Mission St.
SEATTLE—Central Bldg.

Prove it Yourself !

Let your painters cover half of your mill cottages with Cooledge Hygrade Mill Cottage paint and the other half with any other paint you may select. After a few years compare the results. You will find the cottages covered with Cooledge Hygrade with bright and uncracked surfaces. The others will show unmistakable signs of depreciation.

Here's the Reason

Cooledge Hygrade paints are mixed especially to withstand the deteriorating effects of the Southern climate. Years of service in many villages under all conditions have proven their enduring qualities.

Write us today for special quotations on 500 gallons, 1000 gallons and up. Also ask for prices on our shingle stains.

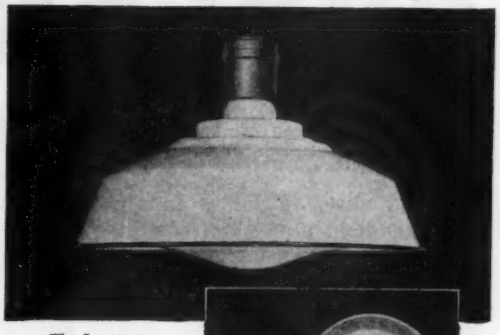
We will make paint exactly according to your engineer's specifications if you prefer, but we strongly advise the use of our own formulae.

COOLEDGE CH HYGRADE
Paints and Varnishes

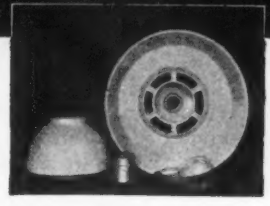
Manufactured Exclusively by

F. J. COOLEDGE & SONS
ATLANTA

CHARLOTTE SAVANNAH TAMPA



The IVANHOE Glassteel Diffuser



Unassembled view of IVANHOE Glassteel Diffuser

Ask Your Engineer about Glassteel Diffusers

If he has studied the IVANHOE Glassteel illumination charts, and compared them with charts of ordinary reflectors, your engineer will tell you promptly that the IVANHOE Glassteel Diffuser is "miles ahead".

If he isn't posted, he's missing his biggest chance to give you really efficient lighting.

The IVANHOE Glassteel Diffuser throws the light downward on the work, and a less intense light on ceiling and walls. Totally enclosed; therefore easy to keep clean. It is by far the most notable development since the production of the RLM reflector.

If someone in your mill hasn't all the Glassteel Diffuser facts, you can get them from the nearest IVANHOE distributor. We'll gladly give you his name and send you a descriptive folder.

IVANHOE-REGENT WORKS
of General Electric Company
Cleveland, Ohio

IVANHOE

GLASS SHADES—STEEL REFLECTORS

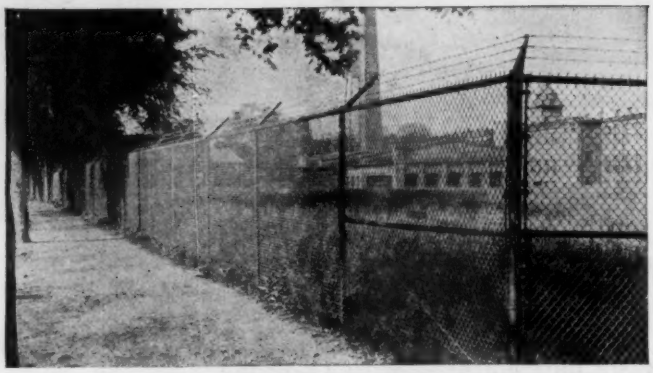
CYCLONE FENCE

The Cyclone Fence Company offers textile mills unusual advantages in the fencing of industrial property.

Speed, quality, efficiency and intelligent application of fence to grounds enclosed are all combined in Cyclone Service. Every fencing problem is handled professionally and completely. Satisfaction guaranteed.

Our years of experience in fencing thousands of industrial plants, among them hundreds of textile mills, is at your disposal. Let us know your requirements. Fencing, wire or iron, built for any purpose.

Write Dept. 35 for literature including specifications and details of Cyclone Fence construction. No obligation.



Cyclone Invincible Chain Link Fence Enclosing Property of International Cotton Mills, LaGrange, Ga.

CYCLONE FENCE COMPANY

Factories and Offices: Waukegan, Ill.; Cleveland, Ohio; Newark, N. J.; Fort Worth, Texas; Oakland, Calif. (Standard Fence Co.); Portland, Ore. (Northwest Fence & Wire Works).

The "Red Tag" — The Mark of Quality

PROPERTY PROTECTION PAYS

Industrial Lighting

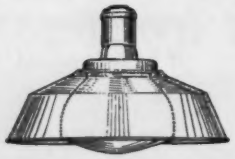
We are rendering textile mills all over the Southeast prompt and efficient service, supplying not only the most efficient and effective systems of illumination particularly suited to every textile mill use, but any type of Edison Mazda Lamp desired.

Whatever your electrical requirement, be it illuminating units, lamps, motors, wiring or what not, you will find Carter Electric Service more satisfactory and prompt.

CARTER ELECTRIC CO.

Distributors

ATLANTA SAVANNAH



The Glassteel Diffuser Equipped With a Cast-Aluminum Holder

COMPLETE LINES OF

Wire
Conduit
Switches
Safety Devices
Fuses
Insulators
Lamps
Lighting Units
Fixtures
Fans
Street Lights
Motors
Brushes
Etc.
Anything Electrical

QUICK DELIVERY

ELECTRICAL SUPPLIES

GENERAL ELECTRIC CO.'S PRODUCTS—MOTORS, WIRE, WIRING DEVICES, ELECTRICAL, PORCELAIN CONDUIT AND FITTINGS, TRUMBULL SWITCHES.

Complete Stocks in Columbia for Prompt Shipment.

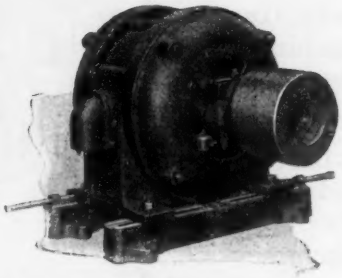
DISTRIBUTING GE JOBBER

PERRY-MANN ELECTRIC COMPANY

COLUMBIA, S. C.

Experience!
Experience gained through many years of conquering difficult electrical problems in mills all over the South means something when it comes to planning the installation of a textile mill electrical system.
Over two million happy spindles in Southern mills are driven or lighted by Huntington & Guerry Trouble Proof Electrical Installations. H. & G. Service means economy, first and last. No matter how large or how small the installation, it can be turned over to H. & G. engineers with the firm assurance that they will solve it as well and as economically as it can be solved.
HUNTINGTON & GUERRY, INC.
GREENVILLE, S. C.
HUNTINGTON & GUERRY TROUBLE PROOF ELECTRICAL INSTALLATIONS
H & G TROUBLE-PROOF ELECTRICAL INSTALLATIONS

Polyphase Induction Motors



Constant and Adjustable Speed

Types "AR" and "ARY" Induction Motors

A new Motor of new design throughout, taking full advantage of all improvements and advances made during recent years.

Type "AR" and "ARY" motors are designed with exceeding ruggedness, cast steel in place of cast iron being a prominent feature.

Method of ventilation is very effective resulting in even cooling and avoiding of "hot spots."

Bearings are of liberal design with spacious oil-wells.

Insulation is of highest grade, stator being treated with baked-on insulating varnish making the whole structure dust and moisture proof.

Motors are for floor or ceiling mounting being provided with very stiff and substantial rails.

Conduit terminal boxes are regular equipment.

ALLIS-CHALMERS PRODUCTS
Electrical Machinery
Steam Turbines
Steam Engines
Gas and Oil Engines
Hydraulic Turbines
Crushing and Cement Machinery
Mining Machinery

ALLIS-CHALMERS MANUFACTURING COMPANY

MILWAUKEE, WISCONSIN, U.S.A.

ALLIS-CHALMERS PRODUCTS
Flour and Saw Mill Machinery
Power Transmission Machinery
Pumping Engines-Centrifugal Pumps
Steam and Electric Hoists
Air Compressors - Air Brakes
Agricultural Machinery
Condensers

THE JOHNSON FRICTION CLUTCH

AS USED ON THE

Morrison Straight Automatic Tentering Machine

EQUIP YOUR TEXTILE MACHINERY WITH THE JOHNSON FRICTION CLUTCH

Single Clutch Exterior

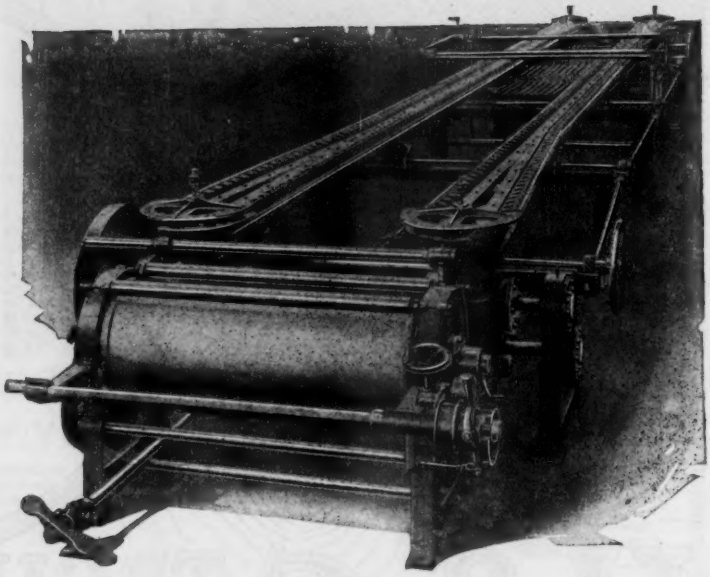
A No. 10 Single Clutch is used on the main drive shaft of each machine.

Single Clutch with pulley.

For textile machinery it is very essential that a reliable and powerful clutch be used so that the machine will always be working at its maximum capacity and thereby be efficient in output.

The Johnson Clutch has been tried by the leading machine manufacturers and adopted on its merit for many machines. The most of these machines are of special design for a particular purpose and therefore cannot be given publicity.

Let us work out your problems.
Write for Catalog G.



Courtesy: Morrison Machine Co., Paterson, N. J.

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER CONN.

Uneven Laps

Cause uneven work. Slipping evener cone belts cause uneven laps. Friction in the apron and evener rolls makes the cone belt slip.

Ball bearings remove this friction and allow the cone belt to give the proper feed of cotton to the beater.

The installation is not expensive and is used on hundreds of lappers.

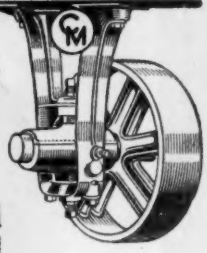
AldricH MachinE

Ball **WorkS** Bearings

Greenwood, S. C.

CRESSON-MORRIS

POWER TRANSMITTING MACHINERY



Power transmitting machinery
Shafting
Rope transmission
Machine moulded and cut iron and steel gears for heavy service.
Complete plant equipment.
Engineers; founders; machinists.
Sugar centrifugals.

CRESSON-MORRIS CO.

18th Street and Allegheny Ave.
PHILADELPHIA, PENNSYLVANIA

2130-X

Sixty Years Experience as Engineers-Founders-Machinists

THE ancient Spartans derived their strength from their belief in "The survival of the fittest." Children that did not appear healthy and vigorous were not wanted in the Spartan nation, and rather than have them grow up to become useless burdens they were exposed to the elements in a mountain chasm and thus destroyed.

Just as the spartans selected the best material in building the manhood of their nation, so Graton & Knight Manufacturing Company selects only the best materials in the production of **Spartan Belts.** This is the main reason why the name Spartan is so universally regarded as meaning high grade by users of belts. It is the survival of the fittest from the selection of the hides to the finished product just as the Spartans let only their fit survive.

Write for our booklet
"The Spartans"

SPARTAN

The Graton & Knight Mfg. Co.

OAK LEATHER TANNERS, MAKERS OF LEATHER BELTING AND OTHER LEATHER SPECIALTIES

Worcester, Mass., U. S. A.

?

How many times a year would a Clipper save its cost *in your plant?*

A Clipper lacing does not cut or injure belting fiber

One Michigan factory reports a saving of $2500 a year, since the adoption of the Clipper method of belt lacing.

A textile mill in Georgia $817.54; a metal working plant in Pennsylvania $1230; another in Illinois $914.36; and so on.

Sold Everywhere by Authorized Mill Supply Dealers

Clipper Belt Lacer Co.
Grand Rapids, Mich., U. S. A.

The **Mechanical Accuracy of Clipper Belt Lacing Assures a flawlessly Laced belt**

Anyone can lace a b[elt] with the **Clipper**

COUPON

CLIPPER BELT LACER CO., Grand Rapids, Mich.

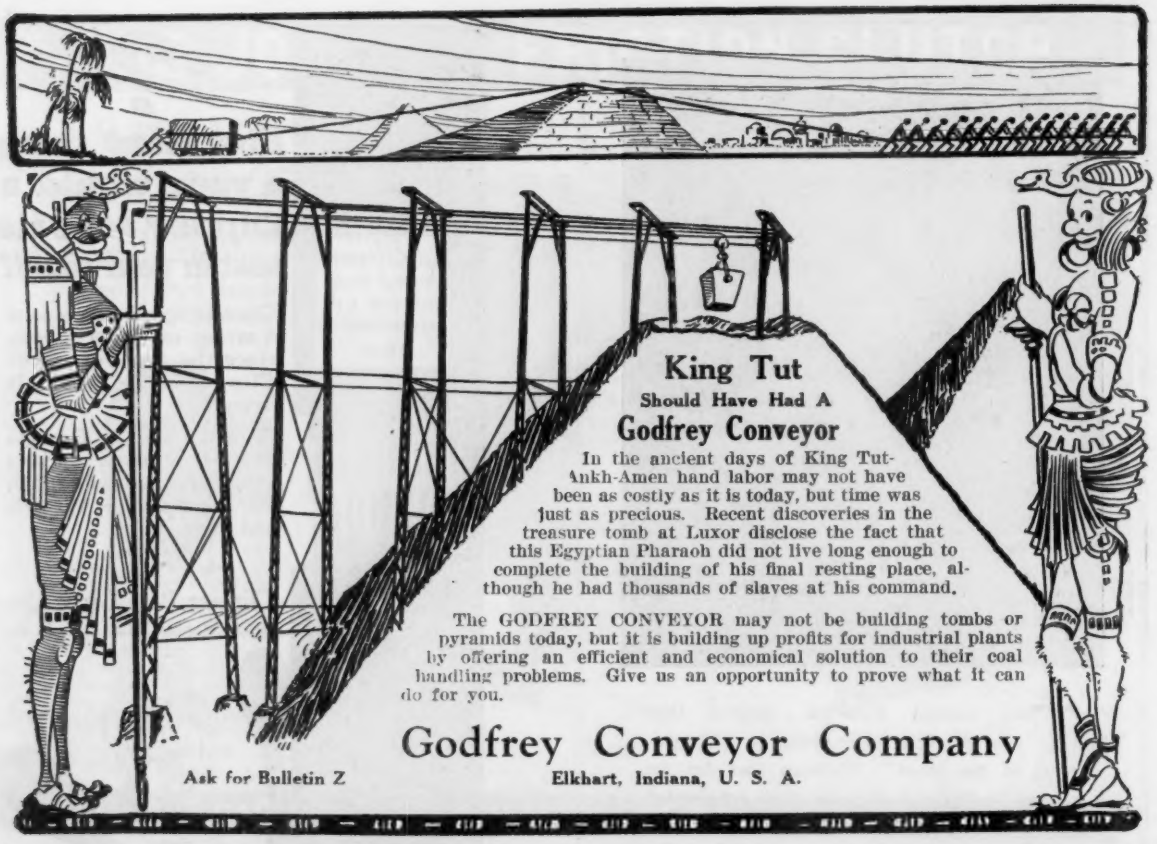
☐ Please send Clipper Belt Lacer on 30 days trial.

☐ Please have salesman call and demonstrate Clipper Belt Lacer.

☐ Please send full information regarding Clipper Belt Lacer.

Name .....

Address .....


King Tut
Should Have Had A
Godfrey Conveyor
In the ancient days of King Tut-Ankh-Amen hand labor may not have been as costly as it is today, but time was just as precious. Recent discoveries in the treasure tomb at Luxor disclose the fact that this Egyptian Pharaoh did not live long enough to complete the building of his final resting place, although he had thousands of slaves at his command.
The GODFREY CONVEYOR may not be building tombs or pyramids today, but it is building up profits for industrial plants by offering an efficient and economical solution to their coal handling problems. Give us an opportunity to prove what it can do for you.
Godfrey Conveyor Company
Ask for Bulletin Z
Elkhart, Indiana, U. S. A.

BETTER NON-FLUID OIL LUBRICATION

Fill Comb Boxes
***Once* every 6 to 8 weeks—with**

TRADE MARK REGISTERED IN
NON-FLUID OIL
UNITED STATES PATENT OFFICE

MODERN TEXTILE LUBRICANTS

This saves lubricant and cuts down the work of oiling.
NON-FLUID OIL also prevents the heating of boxes and reduces the wear on cams.
And NON-FLUID OIL does not drip and spatter all over card clothing, making it last one-third longer.

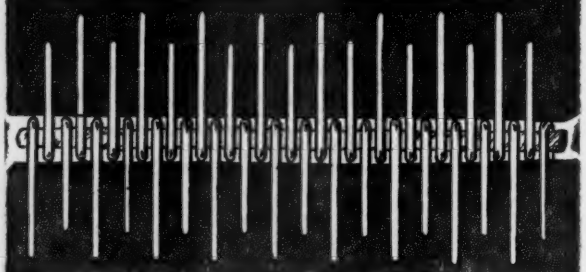
Try NON-FLUID OIL for yourself—write for sample and Bulletin on the Lubrication of Textile Machinery.

New York & New Jersey Lubricant
401 Broadway New York
Southern Agent, L. W. Thomason, Charlotte, N. C.
Ample stocks at our branches
Charlotte, N. C. Greenville, S. C.
Atlanta, Ga. New Orleans, La.

AT LESS COST PER MONTH

"DETROIT"
BELT LACING

Replacing endless belts everywhere. Flexible, smooth, very strong. Each Detroit Hook has a pulling strength of over 100 lbs. Leaves the belt stronger than any other lacing because of perfect staggered grip, less destruction from perforation, and proper degree of stiffness, quality, proportion, size and shape of hooks.



SAVES
time, labor, belts, power, money and annoyance. Detroit Belt Lacing is dependable. Hooks and closing machines to meet every requirement.

Write for card, "Right size of hooks to order" and full particulars.
Detroit Belt Lacer Co., Detroit, Mich.
Branch offices in large cities
Bull Dog Lacer Co., Hamilton, Ont., Can. Nicholson Clipper Co., Manchester, Eng.

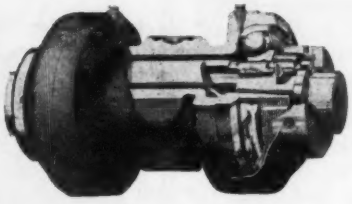
Stop that excessive Waste of Power

Chapman Ball Bearings are effecting savings in power costs from 15% to 35% over the old power wasting method of using babbitted and solid bearings.

They permit speeding up of shafting and machines—thereby increasing production or making available more power for new machinery.

Chapman

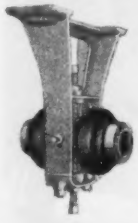
"You Pay for them Whether You Buy them or Not"



Reduce Oiling and Maintenance Costs

Chapman Ball Bearings require no attention except greasing once or twice each year. They are absolutely dust proof and drip proof. Compare with the old expensive way of daily oiling—spoilage of goods from dripping oil—replacement of worn bearings—noise—and all other unnecessary bearing troubles.

You actually pay for Chapman Ball Bearings whether you buy them or not. They soon save their cost.



Shall we send complete information?
To whom? Where?

THE TRANSMISSION BALL BEARING CO., INC.

ELIMINATORS OF BEARING TROUBLES

1050 Military Road
BUFFALO, N. Y.

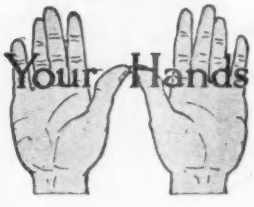
BRANCH OFFICES: New York Chicago Philadelphia
Representatives in Principal Cities

You don't need special machines or an expert beltlacer—when a belt breaks—just

A Hammer

A Piece of Soft Wood

Your Hands



TRADE MARK
and BRISTOL'S
REG. U. S. PAT. OFFICE.

PATENT STEEL BELT LACING

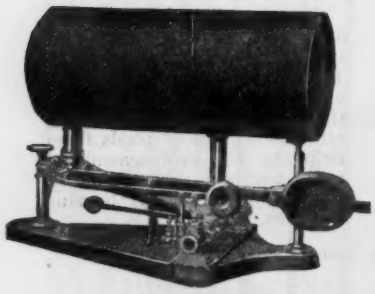
You will have a more satisfactory job and realize a generous saving in time and money—if your own men do your belt repairing with Bristol's Belt Lacing.

Ask for copy of Bulletin 713-J

THE BRISTOL COMPANY **WATERBURY, CONN.**

Boston New York Philadelphia Pittsburgh Chicago Detroit St. Louis San Francisco

Does Condensation Work *For* or *Against* You?



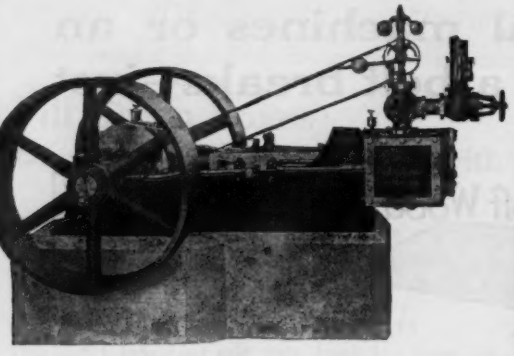
Does it collect in your slashers, dryers, presses or heating system, retarding steam circulation and insulating against heat? Or does it drain freely and constantly and form a cheap and convenient source of hot boiler feed?

A Morehead Back-to-Boiler System will do away with the condensation nuisance by draining it as it forms. It will keep your equipment piping hot and increase its capacity. It will deliver condensation to the boiler at its original high temperature without pumps or injectors. It will increase efficiency or decrease fuel consumption.

Let us do for you what we are doing for others.

MOREHEAD MFG. COMPANY
DEPT. C, DETROIT, MICH. (94)

Morehead
"BACK-TO-BOILER-SYSTEM"
POSITIVELY DRAINS ALL TYPES OF STEAM APPARATUS. DELIVERS CONDENSATION AND FEED WATER TO BOILERS UNDER ALL CONDITIONS AT MAXIMUM TEMPERATURE



J. S. Schofield's Sons Co.
Macon, Georgia
MANUFACTURERS OF
High Pressure Return Tubular Boilers, High Grade Stationary Steam Engines, Tanks, Stacks, Stand Pipes.
Heavy Castings and Wrought Iron Works.

8-30-10

THE LUNKENHEIMER CO.
CINCINNATI

MATCHLESS TROLLEY

"Easiest to Start-Easiest to Keep Going"

Pulling a 1-ton Load with a 14-lb. Weight

The above test is graphic proof of the little effort required to start a heavy load and convey it to any desired point, when carried on a Matchless Timken-Roller-Bearing Trolley.

At 14 lbs. the trolley with its 1-ton load, started smoothly and rolled rapidly along the length of the overhead rail.

The Matchless required only about half the pull demanded by any other trolley—ball or roller bearing—when given the same identical test.

Matchless Trolleys in your plant mean less energy used, speedier action and more output per man.

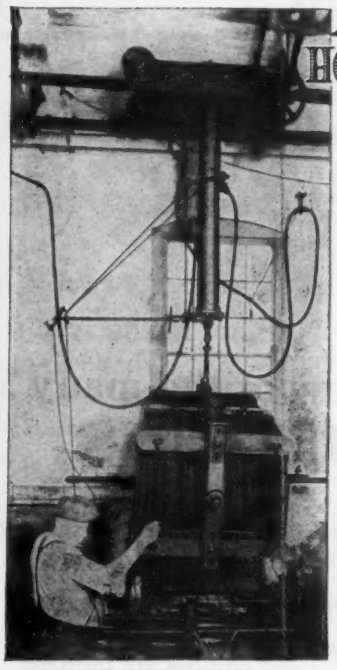
Chisholm-Moore Matchless "Trolleys," "Cyclone" Chain Hoists, and "Carryall" Overhead Track Systems carried in stock by capable distributors in all localities.

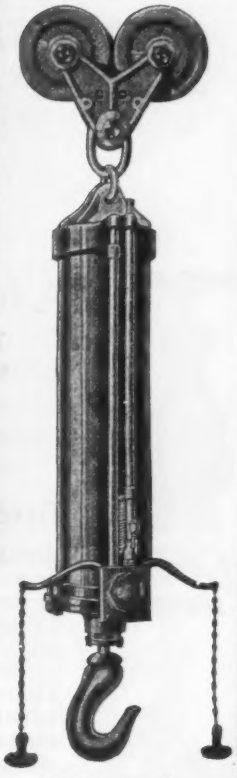
Complete catalog, price and name of nearest representative on request.

The Chisholm-Moore Mfg. Co.
Cleveland, O.
Hoists Cranes Trolleys
Overhead Track Systems
Branches: New York, Chicago, Pittsburgh

CURTIS

AIR HOISTS





"Lift it with air"

Used in The Textile Industry

Curtis one man All Steel Air Hoists and Curtis Roller Bearing Trolleys are effecting important economies in leading textile mills throughout the country.

Why not install a Curtis Air Hoist and operate it with the air you now have available? The wide variety of uses to which Curtis equipment can be most economically applied is worthy of your immediate investigation.

Curtis Pneumatic Machinery Co.
1571 Kienlin Ave. St. Louis, Mo.
Branch Office
532-R Hudson Terminal New York

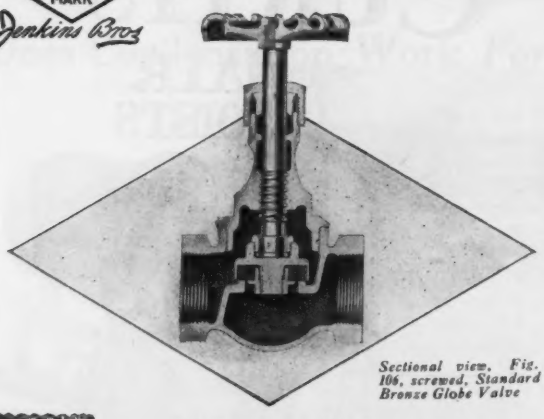
CURTIS
AIR COMPRESSORS-HOISTS-TROLLEYS-CRANES
ST. LOUIS
C.P.M.Co

Established 1854

Made for maximum service not merely the average

TRADE JENKINS MARK

Jenkins Bros



Sectional view, Fig. 106, screwed, Standard Bronze Globe Valve

Fig 108, screwed, Standard Bronze Angle Valve

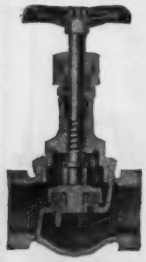


Fig. 650, Bronze Combination Stop and Check Valve

Fig. 657, Bronze Horizontal Check Valve with drip cock

A few of the many JENKINS BRONZE VALVES fitted with Jenkins Disc

Bronze Valves for practically every pressure and purpose are included in the comprehensive Jenkins line. In addition to the correct design and skillful workmanship, the high grade metal used in JENKINS BRONZE VALVES is a feature contributing to the dependability and long life of these valves, even when subjected to the most severe service.

The disc takes up the wear of opening and closing, that otherwise would fall on the seat. A Jenkins Disc in itself gives long service, but can be quickly removed without taking the valve from the line.

Service, the only thing on which valve cost can be determined, proves genuine Jenkins Valves the most economical, and engineers are buying and standardizing on them for this reason.

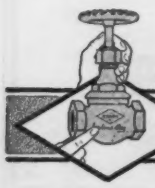
Obtainable through supply houses everywhere.

JENKINS BROS.

80 White St.....New York
524 Atlantic Ave.....Boston
133 No. Seventh St.....Philadelphia
646 Washington Blvd.....Chicago

FACTORIES: Bridgeport, Conn.; Elizabeth, N. J.; Montreal, Can.

2823-J



Always marked with the "Diamond"

Jenkins Valves

SINCE 1864

BOILERS

of the

Water Tube and Tubular Types

OUR SPECIALTY

WALSH & WEIDNER BOILERS with our improved Steel Casing make the ideal Steam Plant. The cost of installation is moderate, the plant looks neat, cost of repairs is slight and they will save from 10 to 25% of your fuel bill.

We also manufacture Tanks of all description, Towers and Tanks, Steel Stacks, Steel Breeching, Smokestacks, Structural Steel and Plate Steel Work.

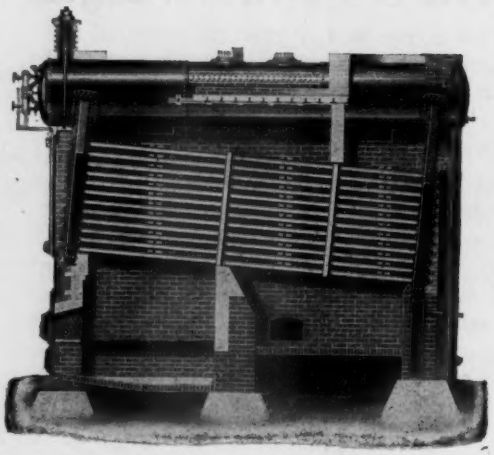
Write for our new catalog.

The Walsh & Weidner Boiler Co.

CHATTANOOGA, TENN.

New York Chicago San Francisco Memphis Havana
Kansas City Jacksonville New Orleans

WATER TUBE BOILERS



HORIZONTAL WATER TUBE BOILERS
VERTICAL WATER TUBE BOILERS
TUBULAR AND MARINE BOILERS
STEEL CASINGS, SMOKE STACKS

THE CASEY-HEDGES CO.

CHATTANOOGA, TENN.

Quick Shipment Our Specialty. Send for Catalogs.

Commission Merchants, Yarn Dealers, Cotton Dealers and Brokers, Banks, Etc.

Real Double Carded COTTON YARN

SPUN BY

THE MYRTLE MILLS, (INC.)

At our Myrtle plant we run choice, white, long staple cotton through two complete sets of cards. This produces a yarn so smooth and clean that it is often judged to be a combed yarn. It is spun in sizes ranging from 36s to 60s, single and ply, in right twist, suitable for knitting, weaving, mercerizing, and converting purposes; and in left twist, in sizes 30s to 45s, suitable for thread converting purposes.

Quotations and samples promptly submitted.

H. A. FLORSHEIM, *General Sales Mgr.*

225 Fifth Avenue **New York, N. Y.**

Also exclusively representing

GRAY MFG. CO.
FLINT MFG. CO.
ARLINGTON COTTON MILLS
PARKDALE MILLS, INC.
ARROW MILLS, INC.
ARKRAY MILLS, INC.

Weimar Bros.

Phone Connections

Works, 2046-48 Amber Street,

PHILADELPHIA, PA.

MANUFACTURERS OF

Cotton Mercerized Tapes, Spool Tapes, Bindings and Narrow Fabrics for Underwear and other Trades.

WOODWARD, BALDWIN & CO.

DRY GOODS

Commission Merchants

43-45 WORTH STREET, NEW YORK

CARVER-BEAVER YARN CO.

Successors to A. D. SALKELD & BRO., Inc.

ALL NUMBERS COTTON MERINO YARNS ALL COLORS WOOL WORSTED

366 BROADWAY, NEW YORK

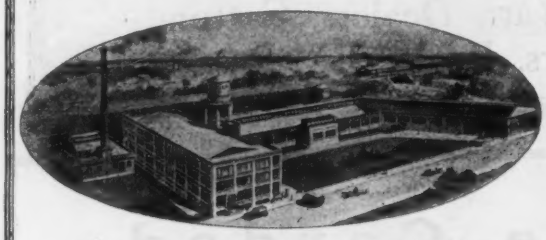
STENCILS FOR COTTON SHIPPERS, COTTON MILLS MERCHANTS & MANUFACTURERS - ALSO BRUSHES, INK MARKING POTS

RUBBER STAMPS NOTARIAL CORPORATION SEALS

ATLANTA RUBBER STAMP & STENCIL WORKS

OFFICE 33 LUCKIE ST. WORKS 350 EDGEWOOD AVE.

P.O. BOX 859 ATLANTA, GA.



View of our Mercerizing and Bleaching Plant

BOGER & CRAWFORD

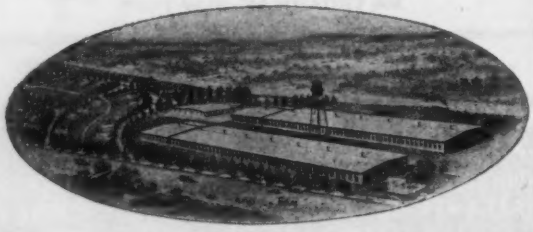
Established 1908

Spinners, Bleachers, Dyers and Mercerizers of High Grade Combed Yarns

By using our Spinning and Mercerizing you are always assured of a standard product.

"From the Cotton Field Direct to You"

Main Office, Factory and Warehouse
J and East Venango Sts., PHILADELPHIA



Spinning Mills, Lincolnton, N. C.

$2.50 Per Day

and upward

is one reason for the rapidly growing popularity of the Hotel Martinique.

Another is the consistent economy of the entire establishment. Here you may enjoy a Club Breakfast at 45c., consisting of Fruit or Cereal, Bacon and Egg, and Rolls and Coffee —Special Luncheon and Dinners of superior quality are also served at the most moderate possible prices.

No location can be possibly more convenient than that of the Martinique. One block from the Pennsylvania Station (via enclosed subway)—Nine blocks from Grand Central—one block from the greatest and best Shops of the City—half a dozen blocks from the Opera and the leading Theatres —and directly connected with the Subway to any part of the City you wish to reach.

"The BEST without extravagance"

Hotel Martinique

Affiliated with Hotel McAlpin

Broadway-32nd to 33rd Sts.
NEW YORK

A. E. Singleton, *Manager.*

Callaway Mills

INCORPORATED

345 Madison Avenue

Phone—Murray Hill 7801

NEW YORK

SELLING AGENTS
Unity Cotton Mills
Milstead Manufacturing Co.
Elm City Cotton Mills
Manchester Cotton Mills
Hillside Cotton Mills
Unity Spinning Mills
Villa Rica Cotton Mills
Athens Manufacturing Co.

Boston Representative
M. R. ABBOTT
110 Summer Street

Chicago Representative
RAY T. JOHNSON
226 W. Adams Street

J. B. JAMIESON CO.

77 SUMMER ST.

BOSTON MASS.

Commission Merchants

COTTON YARNS

of all descriptions for weaving and knitting.

We solicit accounts.

Wire or write us any offerings.

J.H.LANE & CO.

Tire Fabrics
Enamelling Duck
Sheeting

Cord Fabric
Wide Drill
Osnaburg

Special Constructions
Cotton Fabrics

250 W. 57th St.
NEW YORK

225 West Adams St.
CHICAGO

ESTABLISHED 1872

H. & B. BEER

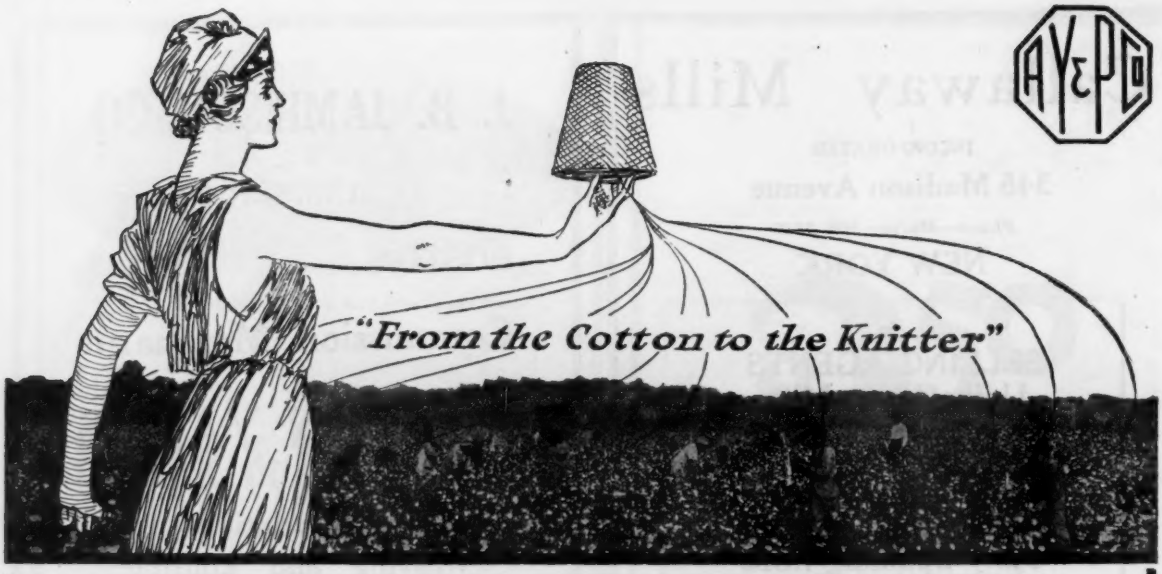
NEW ORLEANS

HENRY BEER
J. WILLIAM BARKDULL
EDGAR H. BRIGHT
C. MORGAN ABRAMS

MEMBERS OF
New Orleans Cotton Exchange
New Orleans Future Brokers Association
New York Stock Exchange
New York Cotton Exchange
New York Coffee Exchange
New York Produce Exchange
Chicago Board of Trade

Associate Members of the Liverpool Cotton Association

Private Wires to Principal Points



AMERICAN YARN & PROCESSING CO.
MOUNT HOLLY, N. C.
SPINNERS AND MERCERIZERS
HIGH GRADE COMBED AND CARDED YARNS—16s to 80s
Our Mercerized Yarns Are the Product of Our Own Mills
General Office, Mt. Holly, N. C. Branch Office, 1111 James Bldg., Chattanooga, Tenn.
Representatives
H. B. ROBIE, 346 Broadway, New York City FORREST BROS., Forrest Bldg., Philadelphia

F. W. LAFRENTZ & COMPANY
announce that they
will handle all Auditing, Accounting, Systematizing and Tax Work heretofore done by them under the name of The American Audit Company.
F. W. Lafrentz, C. P. A. (N. Y.)
A. F. Lafrentz, C. P. A. (N. Y.)
C. B. Bidwell, C. P. A. (Ga.)
AT
1013 Fourth National Bank Bldg.
Atlanta, Ga.
'Phone Walnut 0869

HUGHES FAWCETT
IMPORTER AND COMMISSION MERCHANT
LINEN YARNS
For Weaving, Knitting and all Purposes.
TURKEY RED YARNS
For Towel Borders, Towellings and Bleaching Cloth
Linen Jacquard Harness Twine
And Every Description of Linen Thread and Twine
115 Franklin Street, : NEW YORK

Atlanta & West Point Rail Road Co.
The Western Railway of Alabama
Georgia Railroad

The Summer Tourist Season is now on and vacations are in order. You will be glad to know that conditions surrounding Summer Tourist travel are more liberal this season than in almost any previous year. Reduced rates are in effect to practically every state in the Union as well as to some points in Canada, the various tours including delightful trips on the Atlantic and Pacific Oceans, the Great Lakes, St. Lawrence River, Hudson River, through the Yellowstone and other National Parks, to the Grand Canyon, etc. Stop-overs may be made at any point on either going or return trip, within final limit of ticket, which is, in most cases, October 31, 1923.

Let us help you arrange your vacation. We are here to serve and any information desired will be gladly furnished by ticket agent in your town or by undersigned.

J. P. BILLUPS
General Passenger Agent
ATLANTA GEORGIA

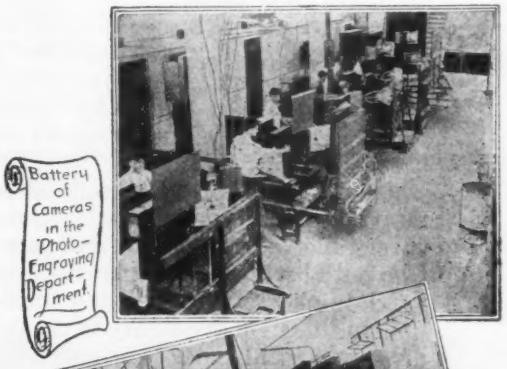
If It's A Broadside—

If it is an especially large illustration for an especially large piece of literature, chart, birds eye view, map, etc. Whether it be in one or more colors, our plant is equipped to supply your needs. No halftone or line plate too large or too small for our equipment.

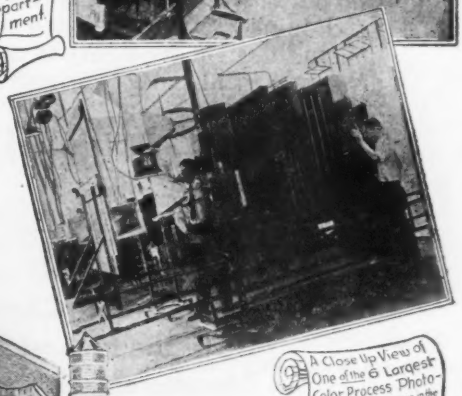
Illustrating Your Literature

Sometimes in the preparation of your sales and advertising plans you find the need of some especially prepared piece of literature, the execution of which will baffle your photographer, electrotyper and printer. Frequently you may seek a service that the ordinary plant cannot give.

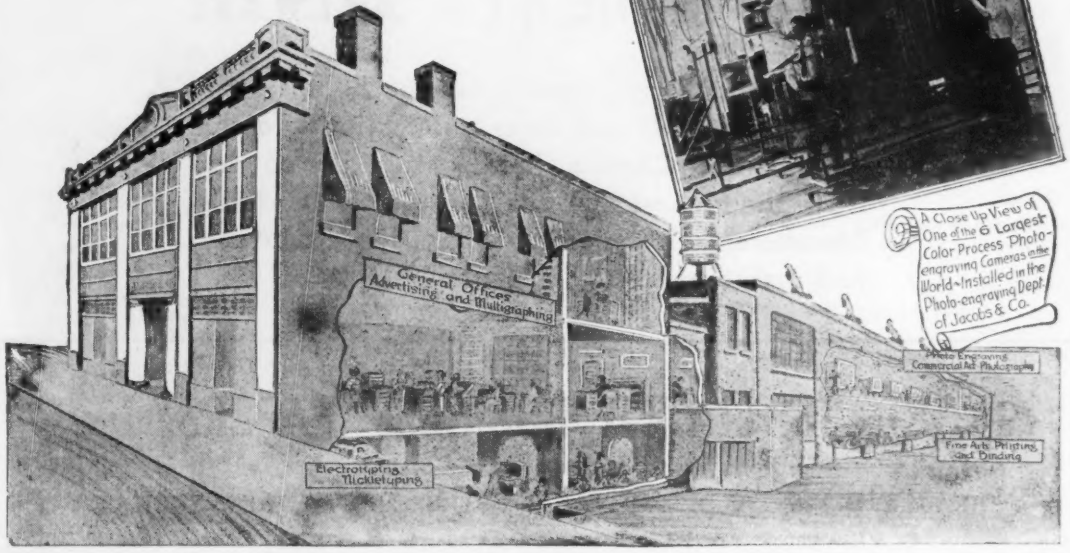
Our plant is designed and equipped for the accomplishment of many difficult products that cannot be secured from most photo-engraving establishments; is equipped to furnish the best of photo-engraving, electrotyping, printing, nickeltyping, commercial art and allied service, whether large or small, whether one or more colors. The extent of our equipment is reflected in the large process camera, which can furnish you with process color plates as large as a yard square. One of the 6 largest in the world. If you have an idea you wish carried into execution, we are at your service. We will gladly perfect it and illustrate it.



Battery of Cameras in the Photo-Engraving Department



A Close Up View of One of the 6 Largest Color Process Photo-engraving Cameras in the World-Installed in the Photo-engraving Dept. of Jacobs & Co.



Jacobs & Company

Clinton, S. C.

Advertising, Commercial Art
Photo-Engraving—Electrotyping
Nickeltyping
Color Printing

The NEWS and NOTHING But the NEWS

ABP STANDARD No. 4

"To refuse to publish 'puffs,' free reading notices or paid 'write-ups'; to keep his reading columns independent of advertising considerations, and to measure all news by this standard: 'Is it REAL NEWS?'

RATHER sweeping in its provisions but necessary if our papers are to hew to the line marked out by Standard No. 1 of our decalogue, which provides that a member of the A B P must "Consider FIRST the interests of the subscriber."

This does not mean that a publisher may not print news about manufacturers and their products, and mention both by name. The makers and vendors of raw and finished products in this field are a part of the industry, a vital part; you are entitled to all the information about them and their goods which will aid you forming intelligent decisions.

It is the business of your business paper to bring you this news, but to present it *wholly* from the standpoint of its NEWS value to you. It is the avowed purpose of every A B P paper to keep its news columns free and clear of the least tint of advertising considerations.

The interests of the subscribers must be paramount.

WHAT IS THE A P B, ANYWAY?

It is a voluntary organization of independent trade, technical and class publications, in this country and Canada, banded together to promote the highest possible publishing standards. Membership is contingent upon the acceptance and maintenance of its standards.

THE ASSOCIATED BUSINESS PAPERS, Inc.

JESSE H. NEAL, *Executive Secretary*

HEADQUARTERS: 220 West 42nd STREET NEW YORK CITY

THE MADISON SQUARE HOTEL

37 Madison Ave., at 26th St.

New York City

Facing Madison Square Park—The Heart of the Cotton Trade

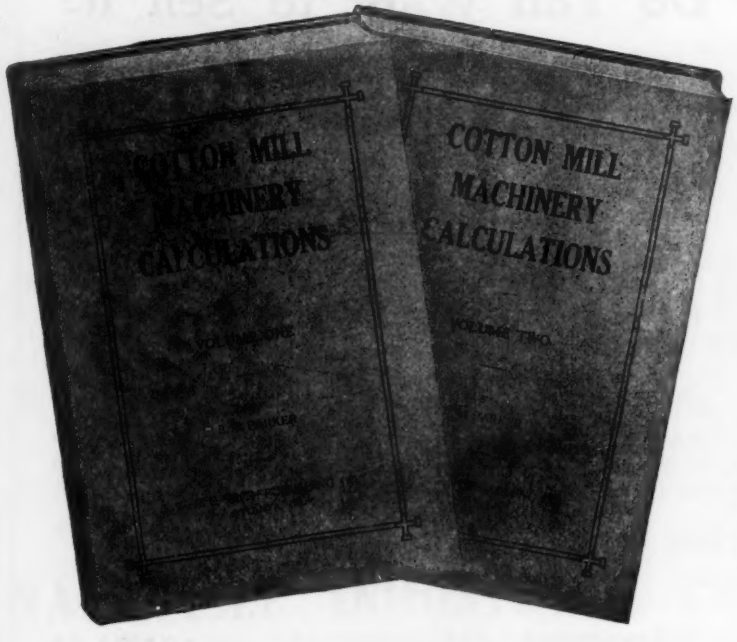
"Live and eat in the same place"

Rooms (European Plan)		Meals	
Single	$2.50 up	Club Breakfast	60c and 75c
Double	$3.50 up	Luncheon	75c
Parlor, Bedroom and Bath	$5.00 up	Home Cooked Dinner	$1.25

A la carte service also.

A New York Home for Southerners

Write for Guide Map of New York. **Management—E. Russell Carlile**



EVERY Textile Man should have these reference books. They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitute one of the best references on this subject obtainable.

The two volumes are illustrated with 45 diagrams and contain 21 reference tables.

As the value of a book lies in its contents and not in a fancy cover, we have put these two volumes out in a strong, serviceable paper binding. You can secure them in conjunction with a subscription to COTTON.

Write for circulars and full information.

CLASSIFIED ADVERTISING

RATES

DISPLAYED.

"For Sale" and all other advertisements using bold-face type or otherwise displayed, $2.00 per inch per insertion.

Rates for larger spaces furnished on application.

WITHOUT DISPLAY.

"Positions Wanted" 3 cents per word per insertion. Minimum charge 50 cents. Payable in advance.

"Positions Open" and other undisplayed advertisements, 4 cents per word per insertion. Minimum charge $1.00. Payable in advance.

(When replies are to be received in our care, allow four words for box address,)

FOR SALE

1—Combination Doubler & Cone Winder (Saco-Lowell) Model 1914	$8.50 per spindle
4—Saco-Lowell (Model 1916 Combination Doubler and Cone Winders	9.50 per spindle
6—Saco-Lowell Camless Cone Winders, 1916 Model	9.00 per spindle
5—Saco-Lowell Camless Cone Winders, 1913 Model	8.00 per spindle
8—Saco-Lowell Camless Cone Winders, 1915 Model	8.50 per spindle
1—Saco-Lowell Camless Cone Winder, 1912 Model	7.00 per spinlle

16 spindles to each machine. If interested in entire lot let us have your best offer.

CHIPMAN KNITTING MILLS
Easton, Pa.

Wanted

Specialty Salesman, to sell to Textile Mills a patented Safety Device for Hooker (folding) Machines. Approved by Insurance Companies, Readily sold—Good Commission. For Agency —Apply to

The Goulet Safety Device Co., 1097 South Main Street, Fall River, Mass.

SUPERINTENDENT AVAILABLE who at present is one of the country's best overseers and for the last eight years overseer of ring spinning in one of the largest northern mills. No reason for changing except he desires advancement and the position of Superintendent. He is an American, age 32, with an excellent education. Besides eight years' experience as overseer in the North has had two years' experience in the South setting up machinery. Address Box 80, care COTTON, Atlanta, Ga.

New and Second Hand

ENGINES

Corliss Automatic and Slide Valve

BOILERS

Pumps, Hoisting Engines, Gas and Gasoline Engines.

MACHINE TOOLS

Lathes, Planers, Shapers, Drill Presses, etc.

WOOD WORKING

Planers, Molders, Band Saws, etc.

ELEC. MACHINERY

Dynamos and Motors
AND SUPPLIES OF ALL KINDS

FRANK TOOMEY, Inc.,
127-31 N. Third St.
Philadelphia, - Pennsylvania

Do You Want to Sell It?

Probably you, like many other mills, have some equipment which you have taken out, or are thinking of taking out and replacing with new equipment.

Why not dispose of this second-hand equipment at a profit? COTTON is read by thousands of Cotton Mills that are hardly touched by Northern journals.

You Can Sell Your Second-Hand Equipment

to these mills through advertising in the Classified Advertising Section of COTTON. Such advertising produces results at small cost—why not try it out and get that second-hand equipment off your hands in a profitable way? Tell us what you have for sale and let us insert an advertisement for you.

COTTON

GRANT BUILDING **ATLANTA, GA.**

Textile Mill Equipment

All At Bargain Prices

Cotton Dryers

25—Sargent No. 24 six section 8 foot Cotton Dryers. Overall dimensions 99′4″ long, 15′5″ wide, 7′10″ high. Equipped with Model "M" Self feeder. Hot air drawn through belt by 33″ exhaust fans. Constructed throughout of metal angles and plates.

Mixing Pickers

25—Sargent Cylindrical type 48″ Mixing Pickers. Equipped with single pair fluted feed rolls, 3½″ diameter. Cylinder provided with 6 heavy steel bars on lugs bolted to spider. Capacity 600 to 800 lbs. per hour.

Cotton Washers

25—Sargent 48″ Special Cotton Washers or Rinsers. Complete with cast iron frame, pans, squeeze rolls, kicker and conveyor.

Feeders

25—Sargent 48″ Model "M" Feeders for Sargent Dryers.

Concentrators

8—Noble and Wood Concentrators right and left hand cylinder washers with octagon cylinder diameter 44″, length 42″. Rotates at 6 R.P.M. Vat is 1′4½″ wide, 6′9″ long, 2′9″ high.

Wringers

65—42″ American Tool and Machine Co. Centrifugal Wringers. Complete with 42″ perforated steel basket shell, with steel top, basket 22½″ inside depth, ⅜″ steel Wringer direct connected to 40 H.P. Motor.

18—Sets 36″ American Tool and Machine Co. Belt Driven Centrifugal Wringers. Each set arranged in batteries of three.

Digesters

40—Welded Steel Digesters. Capacity 1300 cu. ft. Inside diameter 8′, length overall 27′. Complete with cast iron supporting ring, false bottom, hoppers, guides and all accessories.

823 H.P. Boilers

36—823-H.P. Stirling Boilers. Class M-30, complete with all accessories. Babcock & Wilcox Co., New York, makers. 200 lbs. pressure, 630 3½-in. tubes, No. 10 gauge, 150 of these tubes are circulators. Steam drums, double riveted, double strap butt joint, 1-in. rivets. Thickness shell plate and tube ends in steam drums ⅞ in. mud drum 1 in. Space occupied by boiler 18 ft. by 22 ft. 3 in. by 29 ft. 9 in. high. Complete with all accessories.

350 H.P. Engines

18—Corliss Engines. Maker Allis-Chalmers Co. 350 H.P. 18 in. x 36 in. double eccentric, semi-high speed, 125 R.P.M., simple Corliss belted type, designed to operate on 140 lbs. steam pressure with 1½ lbs. back pressure. Double eccentric allows cut off up to 75 per cent of stroke. Flywheel 11 ft. diameter by 32-in. face. Complete with Phoenix individual oiling system. Type R, size 30, made by Richardson-Phoenix Co.

Motors

225—Slightly used Motors 7½-75 H.P. 3 Phase 60 Cycle, 440 Volt.

Tanks

1000—Steel Tanks, 100-55,000 gallon capacity.

350—Wood Tanks, New and Used

Size	Capacity
12′6″ x 11′	10150 gal.
12′6″ x 18′	16600 gal.

Send for Bulletin No. 7.

Scales

500—Howe and Fairbanks Scales. Capacities 600 lbs. to 100 tons. Guaranteed to be in good condition.

Transmission

Pulleys	Shafting
Pillow Blocks	Drop Hangers
Bearings	Couplings
Floor Brackets	Floor Stands
Friction Clutches	Collars

Write for Bulletin No. 15.

Let us submit our quotations and save you money

NASHVILLE INDUSTRIAL CORPORATION

JACKSONVILLE, TENNESSEE

Buyers' Index

ACETYLENE GENERATING APPARATUS.
Oxweld Acetylene Co.

ACETYLENE WELDING APPARATUS.
(See Welding Apparatus.)

ACIDS.
(See Dyestuffs and Chemicals.)

ACCOUNTANTS.
Ernst & Ernst.
La Frentz & Co., F. W.

ACCOUNTING SYSTEMS.
Ernst & Ernst.

ADDING MACHINES.
Monroe Calc. Mch. Co.

AERATING AND CLEANING MACHINE.
Murray Co., The.

AIR WASHERS.
American Blower Co.
Buckeye Blower Co.
Carrier Eng. Corp.
Parks-Cramer Co.
Sturtevant Co., B. F.

AIR COMPRESSORS.
(See Compressors.)

AIR CONDITIONING SYSTEMS
(See Humidifying Apparatus.)

ALBONE.
Hasselacher & Hasslacher Chemical Co.

ALKALIES.
(See Dyestuffs and Chemicals.)

ALUM.
(See Finishing and Sizing Materials.)

ANILINE COLORS.
(See Dyestuffs and Chemicals.)

ANTI-CHLORINE.
(See Dyestuffs and Chemicals.)

ANTI-CHLORINE ACID GENERATOR.
Macomb Machine Co.

APRONS—RUB.
Bond Co., Chas.

ARCHITECTS AND ENGINEERS.
American Industries Eng'g Co.
Lockwood, Greene & Co.
Robert & Co.
Sirrine, J. E.

ARMATURE REWINDING.
(See Repairing—Electrical.)

ARTWORK.
Jacobs & Co.

ASH HANDLING MACHINERY.
(See Coal Handling Machinery.)

ASPHALT SLATE SHINGLES.
(See Slate Asphalt Roofing.)

AUDITORS AND ACCOUNTANTS.
Ernst & Ernst.
La Frentz & Co., F. W.

AUTO TRUCKS.
(See Trucks—Auto.)

AUTOMATIC CONTROLLERS (TEMPERATURE).
(See Temperature Regulators.)

AUTOMATIC LOOM ATTACHMENTS.
(See Loom Attachments.)

AUTOMATIC FEEDS FOR COTTON.
Philadelphia Drying Mchy. Co.
Proctor & Schwartz, Inc.
Saco-Lowell Shops.
Sargent's Sons Corp., C. G.
Whitin Mch. Works.

AUTOMATIC SCALES.
(See Scales.)

AUTOMOBILES.
White Co.

AWNINGS.
Smith Mfg. Co.

BACKWASHERS.
Sargent's Sons Corp., C. G.

BAGS (COTTON PICKER).
Smith Mfg. Co.

BAGS (COIN OR MONEY).
Smith Mfg. Co.

BAGS (COAL).
Smith Mfg. Co.

BAROMETERS.
Taylor Instrument Co.

BALL BEARINGS.
Aldrich Mch. Works.
Dodge Mfg. Co.
Fulton Supply Co.
Fafnir Bearing Co.
Hyatt Roller Bearing Co.
Skayef Ball Bearing Co.
Transmission Ball Bearing Co.
U. S. Ball Bearing Co.

BALL BEARING HOUSINGS.
Aldrich Machine Works.
Fafnir Bearing Co.
Fulton Supply Co.
Transmission Ball Bearing Co.
U. S. Ball Bearing Co.

BALE BAND BUCKLES.
(See Box Strapping & Buckles.)

BALE OPENERS.
(See Openers.)

BALING MACHINES.
Crompton & Knowles Loom Wks.
Draper Corporation.
Economy Baler Co.
Logemann Bros.
Rex Eng'g Corp.
Saco-Lowell Shops.

BALING PRESSES.
(See Presses.)

BANDAGES, TAPES, ETC.
American Textile Banding Co.
Weimar Bros.

BANDAGE & TAPE MACHINES.
Foster Machine Co.
Whitin Mch. Wks.

BANDS.
(See Tapes.)

BANDS (HOSIERY LABELS AND STICKERS).
Kirby-Cogeshall Co.

BARRELS—FIBRE.
(See Fibre Products.)

BASKETS—MILL.
(See Boxes—Mill.)

BATH CABINET—SHOWER.
Crane Co.
Lyon Metallic Mfg. Co.
Sanymetal Products Co.

BATTERIES (ELEC.)
(See Storage Batteries.)

BEAMS.
Mossberg Pressed Steel Corp.
U. S. Bobbin & Shuttle Co.

BEAM DYEING MACHINES.
Cocker Mch. & Fdry. Co.

BEAM HEADS.
Jordan Mfg. Co.
Mossberg Pressed Steel Corp.
U. S. Bobbin & Shuttle Co.

BEAMING AND WARPING MACHINERY.
(See Warpers and Warping Machinery.)

BEARINGS.
Cresson-Morris Co.
Dodge Mfg. Co.
Fulton Supply Co.
Fafnir Bearing Co.
Hyatt Roller Bearing Co.
Renold, Inc., Hans.
Skayef Ball Bearing Co.
Transmission Ball Bearing Co.
U. S. Ball Bearing Co.

BELTING (LEATHER, CANVAS AND RUBBER).
American Supply Co.
Bond Co., Chas.
Fulton Supply Co.
Graton & Knight Mfg. Co.
Rhoads & Sons, J. E.
Williams & Sons, I. B.

BELTING—CHAIN.
Dodge Mfg. Co.
Fulton Supply Co.
Link-Belt Company.
Morse Chain Co.
Renold, Inc., Hans.

BELTING (ROUND—LEATHER).
Bond Co., Chas.
Graton & Knight Mfg. Co.
Rhoads & Sons, J. E.

BELTING—ROPE.
(See Rope Transmission.)

BELT CONVEYORS.
Dodge Mfg. Co.
Fulton Supply Co.
Link-Belt Company.
Morse Chain Co.

BELT DRESSING.
Bond Co., Chas.
Dixon Crucible Co., Jos.
Fulton Bag & Cotton Mills.
Graton & Knight Mfg. Co.
Rhoads & Sons, J. E.
Williams & Sons, I. B.

BELT FASTENERS.
Bristol Co.
Carr Fastener Co.
Clipper Belt Lacer Co.
Detroit Belt Lacer Co.
Fulton Supply Co.

BELT LACING (LEATHER).
Bond Co., Chas.
Dodge Mfg. Co.
Fulton Supply Co.
Graton & Knight Mfg. Co.
Rhoads & Sons, J. B.
Williams & Sons, I. B.

BELT TIGHTENERS.
Dodge Mfg. Co.
Fulton Supply Co.
Link-Belt Company.
Rhoads & Sons, J. E.
Wood's Sons Co., T. B.

BELT TIGHTENER DEVICE FOR CONE PICKERS.
Bahan Textile Mch. Co.

BENCH DRAWERS.
Lupton's Sons Co., David.

BENCH LEGS (PRESSED STEEL).
Lupton's Sons Co., David.

BENCHES (PARK AND PLAYGROUND).
(See Playground Equipment.)

BLEACHERIES.
(See Dyers, Bleachers and Finishers.)

BLEACHING KIERS.
Butterworth & Sons Co., H. W.
Cocker Mch. & Fdry. Co.
Philadelphia Drying Mchry. Co.
Proctor & Schwartz, Inc.
Textile Finishing Machry. Co.
Woolford Wood Tank Co., G.

BLEACHING MACHINERY.
(See Dyeing, Bleaching and Finishing Machinery.)

BLEACHING, FINISHING AND SIZING MATERIALS.
(See Finishing Materials.)

BLOWERS AND BLOWER SYSTEMS.
American Blower Co.
Buckeye Blower Co.
Carrier Eng. Corp.
General Electric Co.
Philadelphia Drying Mchry. Co.
Sturtevant Co., B. F.
Westinghouse Elec. & Mfg. Co.

BLOWPIPES (BRAZING, CUTTING, WELDING).
Oxweld Acetylene Co.

BOARDS—FIBRE.
National Vulcanized Fibre Co.
Standard Fibre Co.

BOARDS—FORM.
Pearson, Jos. T.

BOBBINS.
Draper Corporation.
Fulton Supply Co.
Jordan Mfg. Co.
Lestershire Spool & Bobbin Co.
Parker Co., Walter L.
Vermont Spool & Bobbin Co.
U. S. Bobbin & Shuttle Co.
Whitin Machine Works.

BOBBIN HEADS.
Jordan Mfg. Co.
U. S. Bobbin & Shuttle Co.
Vermont Spool & Bobbin Co.

BOBBIN STRIPPERS.
Crompton & Knowles Loom Works.
Terrell Machine Co.

BOILERS.
Casey-Hedges Co.
Cole Mfg. Co., R. D.
International Engineering Wks., Inc.
Lombard Iron Works & Supply Co.
Nashville Industrial Corp.
Schofield's Sons Co., J. S.
Toomey, Frank.
Walsh & Weidner Boiler Co.

BOILER COMPOUNDS.
Dixon Crucible Co., Jos.

BOILER FEED WATER PURIFICATION.
American Water Softener Co.
Casey-Hedges Co.
Norwood Engineering Co.
Scaife & Sons, Wm. B.

BOILER ROOM FITTINGS AND SUPPLIES.
American Blower Co.
Bristol Co.
Casey-Hedges Co.
Crane Co.
Dixon Crucible Co., Jos.
Fulton Supply Co.
Godfrey Conveyor Co.
International Engineering Co.
Jenkins Bros.
Lunkenheimer Co.
Nashville Industrial Corp.
Sturtevant Co., B. F.

BOILER GRATES AND STOKERS.
(See Grates and Stokers.)

BOOKKEEPING MACHINES.
Monroe Calc. Mch. Co.

BOX STRAPPING AND TIE BUCKLES.
(See Banding Straps and Buckles.)

BOXES—MILL.
Lewis Co., G. B.
Lyon Metallic Mfg. Co.
National Vulcanized Fibre Co.
Smith Mfg. Co.
Standard Fibre Co.

BOXES—PACKING.
(See Packing Boxes.)

BRAID.
(See Tapes.)

BRAZING.
(See Welding.)

BRICK (BUILDING & PAVING).
National Paving Brick Mfg. Asso.

BROKERS—COTTON.
(See Cotton Dealers & Brokers.)

BROKERS—STOCK.
(See Stocks and Bonds.)

BROOMS.
(See Brushes.)

BROOMS—REFILLABLE.
Re-Fil-It Broom Mfg. Co.
Wonderlich Co., H.

BRUSHES—MILL.
Atlanta Brush Co.
Re-Fil-It Broom Mfg. Co.
Southwestern Broom Mfg. Co.
Wonderlich Co., H.

BRUSHES—MOTOR AND GENERATOR (COMMUTATOR).
Dixon Crucible Co., Jos.
General Electric Co.
Westinghouse Elec. & Mfg. Co.

BUCKETS AND PAILS—MILL.
Standard Fibre Co.

BUCKETS—ELEVATOR AND GRAB.
Link-Belt Company.

BUCKLES—COTTON TIE.
(See Box Strapping and Ties.)

BUILDING CONTRACTORS.
(See Contractors.)

BUILDINGS (PORTABLE STEEL).
Dowman, George.
Dowman-Dozier Mfg. Co.

BUILDINGS (READY BUILT).
Minter Homes Co.

BUILDINGS (ALL STEEL).
Dowman, George.
Truscon Steel Co.
Maryland Metal Building Co.

BUILDING MATERIAL.
Anchor Post Iron Works.
Barrett Co., The.
Birmingham Slag Co.
Bogart & Carlough Co.
Callahan Co., T. J.
Cooledge & Sons, F. J.
Detroit Graphite Co.
DeVilbiss Mfg. Co.
Dowman-Dozier Mfg. Co.
Dowman, George.
Dufur & Co.
Knapp Fence Co.
Lupton's Sons Co., David.
Maryland Metal Building Co.
Minter Homes Co.
Murphy's Sons, C. P.
National Paving Brick Mfg. Asso.
Richardson Co.
Sanymetal Products Co.
Sonneborn Sons, Inc., L.
Southern Cypress Mfg. Asso.
Southern Wood Preserving Co.
St. Louis Surfacer & Paint Co.
Truscon Steel Co.
Variety Fire Door Co.
Wagner Mfg. Co.
Walker Electric & Plb. Co.
Ware Paint Co.

BURR PICKERS.
Proctor & Schwartz, Inc.
Sargent's Sons, C. G.

BUSHINGS.
Southern Spindle & Flyer Co.

BUSINESS METHODS.
(See Consultants.)

CABINETS.
(See Lockers.)

CALCULATING MACHINES.
Monroe Calculating Mch. Co

CALENDERS.
Butterworth & Sons Co., H. W.
Textile Finishing Mchry. Co

CALENDER ROLLS.
(See Rolls—Calender.)

CALLING SYSTEM—INTER-TELEPHONE.
Carter Electric Co.

CAMLESS DETACHING DEVICES.
Reiger Co.

CAMPING EQUIPMENT, FURNITURE, STOVES, LIGHTS ETC.
Smith Mfg. Co.

CANNING OUTFIT.
Home Canner Co.

CANS—ROVING.
National Vulcanized Fibre Co.
Standard Fibre Co.

CANS (DRYING).
(See Drying Equipment.)

CARS AND TRUCKS—FIBRE.
(See Trucks.)

CARDS (BUSINESS OR CALLING—ENGRAVED).
Wiggins Co., John B.

CARBON BURNING APPARATUS.
Oxweld Acetylene Co.

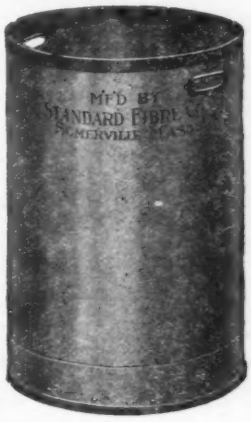
CARBON RODS AND PASTE (WELDING).
Oxweld Acetylene Co.

CARBONIZING MACHINERY.
Klauder-Weldon Dyeing Machine Co.
Macomb Machine Co.
Philadelphia Drying Mchry. Co.
Proctor & Schwartz, Inc.
Sargent's Sons & Co., C. G.
Textile Finishing Mchry Co.
Tolhurst Mch. Works.

CARDING MACHINERY AND SUPPLIES.
Howard & Bullough.
Proctor & Schwartz, Inc.
Roy & Son, B. S.
Saco-Lowell Shops.
Southern Spindle & Flyer Co.
Whitin Machine Works.

WRITE US
for catalog on
other
Mill Receptacles.

No-Waste
SEAMLESS ROVING CANS



Waste Baskets
Taper Baskets
Oval Cans
Elliptical Cans

Sizes
9"-10"-11"-12"-14"-18"
diameters
and
up to 45" high

NO
seams, joints,
or
Rivets.

Styles

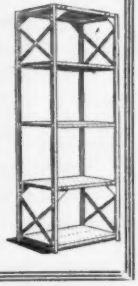
Polished
Steel
or
Rolled Fibre
Top Rims
Rings
BEADED
securely
to
Hard Fibre
Shells

Hard Fibre
MILL BARRELS
Plain Fibre
and
NEW PATTERN
Steel Clad
Trucks and Boxes
Combination
Doffing Cars

STANDARD FIBRE CO.
Somerville, Massachusetts

Steel Shelving

Lupton
INVESTMENT VALUE
PHILADELPHIA



Factory Equipment
From Warehouse Stocks
David Lupton's Sons Company
Amber St. and Allegheny Ave.
Philadelphia

Value Received!

In the purchase of STANDARD Oxygen you are assured of absolute purity—99.5% pure—value received.

In the use of STANDARD Oxygen you not only effect significant economies, but the parts welded or built up may be said to be even stronger than the original work of the manufacturer.

You know the savings in welding over buying new machinery or parts. We have the correct oxygen for your purposes. We can make quick deliveries.

A trial is convincing evidence of the purity and superiority of STANDARD Oxygen.

A Postal Brings Details

STANDARD GAS PRODUCTS CO., INC.
ATLANTA, GA.

STANDARD
OXYGEN FOR WELDING

CORTRIGHT
METAL SHINGLE

By hand-dipping Cortright Metal Shingles after they have been cut and stamped, we insure these shingles a zinc coating unbroken by any stamping operation.

CORTRIGHT METAL ROOFING CO.
Philadelphia Chicago

STANDARD SINCE 1887

BUYERS' INDEX—Continued.

CARD FEEDS.
Proctor & Schwartz, Inc.
Schofield Co., Wm.
Whitin Machine Co.

CARD GRINDING MACHINERY.
Proctor & Schwartz, Inc.
Roy & Son, B. S.
Whitin Machine Works.

CARPET MACHINERY.
Butterworth, H. W. & Sons Co.
Crompton & Knowles Loom Works.
Philadelphia Drying Mchry. Co.
Proctor & Schwartz, Inc.
Schofield, Wm., Co.
Textile Finishing Mchry Co.

CARRIER APRONS.
(See Aprons.)

CARRIER SYSTEM.
Euclid Crane & Hoist Co.
Curtis Pneumatic Machry. Co.
Wagner Mfg. Co.

CASES—WOODEN.
(See Packing Cases.)

CASTINGS.
Briggs, Schaffner Co.
Cole Mfg. Co., R. D.
Cresson-Morris Co.
Lombard Fdry. & Mch. Co.
Walsh & Weidner Boiler Co.

CAUSTIC SODA.
(See Bleaching Materials.)

CEMENT REINFORCEMENT.
Birmingham Slag Co.
Truscon Steel Co.

CEMENT AND BRICK COATING.
American Cement Paint Co.
Detroit Graphite Co.
Cooledge & Sons, F. J.
Dixon Crucible Co., Jos.
St. Louis Surfacer & Paint Co.
Hockaday Co.
Sonneborn Sons, Inc., L.
Wadsworth, Howland & Co., Inc.
Ware Paint Co.

CENTRAL STATION (ELECTRIC).
Alabama Power Co.
Georgia Railway & Power Co.
Tennessee Electric Power Co.

CENTRIFUGALS.
Cresson-Morris Co.
Fletcher Works.
Goulds Mfg. Co.
Schaum & Uhlinger.
Tolhurst Mch. Wks.

CHAIN DRIVES.
(See Belting—Chain Link.)

CHAIN—BLOCK, BICYCLE, AUTO, ENGINE, AGRICULTURAL, ETC.
Fulton Supply Co.
Link Belt Co.
Morse Chain Co.
Renold, Inc., Hans.

CHAIRS AND STOOLS.
(See Furniture—Mill.)

CHECK STRAPS.
Bond Co., Chas.
Fulton Supply Co.
Hayes Loom Reed & Harness Co.
Jacobs Mfg. Co., E. H.

CHEMICALS.
(See Dyestuffs and Chemicals.)

CHLORINE GAS.
Electro Bleaching Gas Co.
Mathieson Alkali Works, Inc.

CLEANING AND AERATING MACHINE FOR COTTON.
Murray Company, The.

CLEARER CLOTH.
Philadelphia Felt Co.

CLOCKS—HANK, ETC.
(See Counters.)

CLOCKS (TIME).
Root Co.
Silberberg, Mortimer J.

CLOCKS—WATCHMAN.
Foxboro Co., Inc.
Root Co.

CLOSETS—WATER.
(See Toilets.)

CLOTH CUTTERS.
Firsching, J. A.
Foster Machine Co.
Wildman Mfg. Co.

CLOTH REELS.
Gallaudet Aircraft Corp.

CLOTH ROOM MACHINERY.
Butterworth, H. W., & Sons Co.
Firsching, J. A.
Foster Machine Co.
Hopedale Mfg. Co.
Saco-Lowell Shops.
Textile Finishing Mchry. Co.
Williams Co., J. H.
Wildman Mfg. Co.

CLOTH SHRINKING MACHINERY.
Philadelphia Drying Mchry. Co.
Proctor & Schwartz, Inc.
Reliance Machine Works.
Tolhurst Mch. Wks.

CLOTH TESTERS.
Scott Co., Henry L.

CLOTH WINDERS.
(See Winders.)

CLUTCHES—FRICTION.
Allis-Chalmers Mfg. Co.
Carlyle-Johnson Machine Co.
Cresson-Morris Co.
Fulton Supply Co.
Link-Belt Company.
Mason, Volney W.

CLUTCH LININGS.
Carlyle-Johnson Mch. Co.

COAL AND ASH HANDLING MACHINERY.
Godfrey Conveyor Co.
Link-Belt Company.

COAL TAR DISINFECTANTS.
(See Disinfectants.)

COCKS.
(See Valves.)

COLOR PAILS.
(See Buckets—Mill.)

COMB APRONS.
(See Aprons.)

COMBERS AND COMBER SUPPLIES.
Foster Machine Co.
U. S. Bobbin & Shuttle Co.
Whitin Machine Wks.

COMMISSION MERCHANTS & DEALERS.
(See Cotton Cloth Commission Merchants.)

COMPRESSORS—AIR, GAS, ETC.
Allis-Chalmers Mfg. Co.
Curtis Pneumatic Mchry Co.
Fulton Supply Co.
General Electric Co.
Goulds Mfg. Co.

COMMUTATOR BRUSHES.
(See Brushes—Motor and Generator.)

CONCRETE REINFORCEMENT.
Birmingham Slag Co.

CONDENSERS.
Allis-Chalmers Mfg. Co.

CONDUITS.
(See Elec. Machinery & Supplies.

CONE BELT TENSION DEVICE.
Bahan Textile Mch. Co.

CONE (KNITTING YARN).
Foster Mch. Co.

CONE WINDING MACHINE.
(See Winding Machinery.)

CONNECTORS—FRANKEL SOLDERLESS.
Westinghouse Elec. & Mfg. Co.

CONSULTANTS (BUSINESS METHODS).
Ernst & Ernst.

CONSULTING ENGINEERS.
(See Architects and Engineers)

CONTRACTORS AND ENGINEERS—BUILDING.
Dowman, George.
Dowman-Dozier Mfg. Co.
Sirrine & Co., J. E.
Truscon Steel Co.

CONTRACTORS—ELECTRICAL.
(See Electrical Engineers.)

CONTRACTORS (HEATING & PLUMBING).
Walker Electric & Plb. Co.

CONTRACTORS (ROOFING).
Dowman, Geo.
Dowman Dozier Mfg. Co.
Murphy's Sons, C. P.

CONTROLLING INSTRUMENTS—TEMPERATURE.
Bristol Co.
Foxboro Co., Inc.
General Electric Co.
Taylor Instrument Co.

CONVEYORS—BELT.
(See Belt Conveyors.)

CONVEYING MACHINERY.
American Supply Co.
Chisholm-Moore Mfg. Co.
Collins, J. D.
Cresson-Morris Co.
Curtis Pneumatic Mchry. Co.
Dowman, George.
Euclid Crane & Hoist Co.
Fulton Supply Co.
Godfrey Conveyor Co.
Link-Belt Co.
Morse Chain Co.
Phila. Drying Machinery Co.
Proctor & Schwartz, Inc.
Renold, Hans.
Schofield, Wm. Co.
Wagner Mfg. Co.

CONVEYORS—PORTABLE.
Euclid Crane & Hoist Co.
Link-Belt Co.

COOLERS.
(See Humidifying Apparatus.)

COOLERS—WATER.
(See Water Coolers.)

COOLING AND CONDITIONING EQUIPMENT.
American Blower Co.
Buckeye Blower Co.
Sturtevant Co., B. F.

COOLING TOWERS.
(See Tanks and Towers.)

COPPER STAMPS AND STENCILS.
(See Stamps, Stencils, etc.)

CORDAGE MACHINERY.
Saco-Lowell Shops.
Textile Finishing Machinery Co., The.

COST SYSTEMS.
Ernst & Ernst.

COTTAGES (READY BUILT).
Minter Homes Co.

COTTON CLEANING AND AERATING MACHINE.
Murray Company, The.

COTTON FANS.
(See Blowers.)

COTTON YARN AND CLOTH COMMISSION MERCHANTS AND DEALERS.
Aberfoyle Mfg. Co.
Anderson, Clayton & Co.
Boger & Crawford.
Callaway Mills.
Carver-Beaver Yarn Co., Inc.
Fawcett, Hughes
Florsheim, H. A.
Hunter Mfg. & Comm. Co.
Jamieson, J. B.
Lane & Co., J. H.
Weimar Bros.
Wellington, Sears & Co.
Woodward, Baldwin & Co.

COTTON MERCHANTS AND BROKERS
Beer & Co., H. & B.

COTTON MILL MACHINERY AND SUPPLIES.
American Blower Co.
Atlanta Harness & Reed Mfg. Co.
Auto Creel Corp.
Bahan Textile Mch. Co.
Barber-Colman Co.
Butterworth & Sons, H. W.
Crompton & Knowles Loom Works.
Draper Corporation.
Dowman, George.
Dryer Corp. of America.
Durant Mfg. Co.
Eclipse Textile Devices, Inc.
Firsching Co., J. A.
Fletcher Works.
Foster Machine Co.
Foxboro Co., Inc.
Fulton Supply Co.
Gallaudet Aircraft Corp.
Greist Mfg. Co.
Hayes Loom Reed & Harness Co.
Hopedale Mfg. Co.
Howard Bros. Mfg. Co.
Howard & Bullough.
Hunt Machine Co., Rodney.
Hyatt Roller Bearing Co.
Jacobs Mfg. Co., E. H.
Lestershire Spool Mfg. Co.
Lowell Crayon Co.
Mill Devices Co.
Mossberg Pressed Steel Corp.
National Vulcanized Fibre Co.
Parker Co., Walter L.
Phila. Drying Mchry. Co.
Proctor & Schwartz, Inc.
Root Co.
Roy & Son, B. S.
Sargent's Sons Corp., C. G.
Saco-Lowell Shops.
Schaum & Uhlinger.
Schofield Co., Wm.
Stafford Co.
Steel Heddle Mfg. Co.
Sturtevant Co., B. F.
Suter, Alfred.
Terrell Machine Co.
Textile Finishing Machinery Co.
Textile Rubber Co.
Toledo Scale Co.
Tolhurst Mch. Wks.
Universal Winding Co.
U. S. Bobbin & Shuttle Co.
Vermont Spool & Bobbin Co.
Washburn & Sons, L. R.
Williams Co., J. H.
Whitin Machine Works.
Whitinsville Spinning Ring Co.

COTTON TAPE LOOM.
Fletcher Works.
Foster Mch. Co.
Schaum & Uhlinger.

COTTON YARN MILLS.
(See Yarn Manufacturers.)

COUNTERS—REVOLUTION, HANK, PICK, ETC.
Bristol Co.
Durant Mfg. Co.
Foxboro Co.
Root Co.

COUNTERS—RESTAURANT.
(See Restaurant Equipment.)

COUPLING—SHAFT.
Cresson-Morris Co.
Dodge Mfg. Co.

COVERING—ROLLER.
Bond Co., Chas.

CRANES.
(See Hoists.)

CRAYONS.
Lowell Crayon Co.

CREELS.
Auto Creel Corp.
Suter, Alfred.

CREOSOTED FLOORING, BLOCKS, POSTS, SHINGLES, ETC.
Southern Wood Preserving Co.

CUTS FOR PRINTING.
Jacobs & Co.

CUTTERS—CLOTH.
(See Cloth Cutters.)

CUTTERS—THREAD.
(See Thread Cutters.)

DECARBONIZING APPARATUS
Oxweld Acetylene Co.

CUTTING APPARATUS (OXY-ACETYLENE & OXY HYDROGEN).
Oxweld Acetylene Co.
Standard Gas Products Co.

DEHUMIDIFIERS.
American Moistening Co.
Sturtevant Co., B. F.

DELIVERY CASES.
(See Boxes—Packing.)

DESKS—FACTORY.
Lupton's Sons Co., David.

DEXTRINES.
(See Dyestuffs and Chemicals.)

DIAL SCALES.
(See Scales.)

DIES—STEEL.
(See Stamps, Stencils, Etc.)

DIE STOCKS.
(See Pipe Threaders.)

DISINFECTANTS.
Barrett Co., The.

DOBBY CHAINS.
Crompton & Knowles Loom Wks.
Whitin Machine Works.

DOBBY CARDS.
Jacobs & Co., E. H.

DOFFING BOXES—MILL.
(See Boxes—Mill.)

DOFFER FILLETS.
(See Fillets.)

DOFFING CARS.
(See Cars.)

DOORS—STEEL.
Dowman, George.
Dowman-Dozier Mfg. Co.
Lupton's Sons Co., David.
Variety Fire Door Co.

DRAWINGS AND ARTWORK.
Jacobs & Co.

DRAWING FRAMES.
Howard & Bullough.
Saco-Lowell Shops.
Whitin Machine Works.

DRILLS—ELECTRIC.
(See Electric Machinery.)

DRINKING FOUNTAINS.
(See Fountains—Drinking.)

DROP WIRES.
Draper Corp.
Greist Mfg. Co.
Mossberg Pressed Steel Corp.
Steel Heddle Mfg. Co.
Williams Co., J. H.

DRYING APPARATUS.
American Blower Co.
Buckeye Blower Co.
Dryer Corp. of America.
Philadelphia Drying Mchry. Co.
Proctor & Schwartz, Inc.
Sturtevant Co., B. F.

DRYING FORMS—HOSIERY.
Pearson, Jos. T.

DRYING MACHINERY AND EQUIPMENT.
American Blower Co.
American Laundry Mchry. Co.
Butterworth, H. W., & Sons Co.
Cocker Mch. & Fdry. Co.
Dryer Corp. of America.
Philadelphia Drying Mchry. Co.
Proctor & Schwartz, Inc.
Sargent's Sons Corp., C. G.
Sturtevant Co., B. F.
Textile Finishing Machinery Co., The.
Tolhurst Machine Works.

DUST COLLECTORS.
(See Blowers and Blowing Systems.)

DUSTING MACHINERY.
Proctor & Schwartz, Inc.
Schofield Co., Wm.

DYERS, BLEACHERS AND FINISHERS.
American Yarn & Processing Co.
Boger & Crawford.
Dixie Mercerizing Co.
Franklin Process Co.

DYEING, BLEACHING, FINISHING AND PRINTING MACHINERY AND EQUIPMENT.
American Laundry Mchry. Co.
Butterworth & Sons Co., H. W.
Cocker Mch. & Fdry. Co.
Cole Mfg. Co., R. D.
Dryer Corp. of America.
Electro Bleaching Gas Co.
Firsching, J. A.
Fletcher Works.
Franklin Process Co.
Hunt Machine Co., Rodney.
Klauder-Weldon Dyeing Mch. Co.
Macomb Machine Co.
Phila. Drying Machinery Co.
Proctor & Schwartz, Inc.
Reliance Machine Works.
Schaum & Uhlinger.
Textile Finishing Machinery Co., The.
Tolhurst Machine Works.
Woolford Wood Tank Co., G.

DYEING MACHINES (PACKAGE AND SPOOL).
Franklin Process Co.

DYE BAGS OR NETS.
Smith Mfg. Co.

DYE STICKS.
Phila. Drying Machinery Co.

DYE VATS AND TUBS.
(See Tanks or Bleaching Kiers.)

Pat. Applied for

SPUR-CAP SHELLS

Made to Stand the Hard Knocks

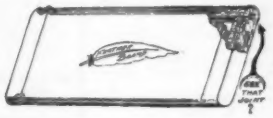
MANUFACTURED BY

GALLAUDET AIRCRAFT CORP'N.,

EAST GREENWICH, R. I.

FEATHERBOARD

The Master Cloth Reel



LIGHT AND STRONG. IMPROVES YOUR PUT UP.

"ATLANTA" HARNESS

"Quality and Service That Satisfies"

ATLANTA HARNESS & REED MFG. CO.

ATLANTA, GA.
P. O. Box 1375
Telephone Main 0517

Schofield Patent Automatic Opener and Duster

For opening and dusting Wool, Cotton, Linters, Hair and kindred fibrous substances.

"Schofield" intermediate feeds for Cards, Wool, Rag, Waste, Hair and Lumper Pickers, Automatic, Cone and Oldham Willows, Rag and Extract Dusters, Waste Pullers, Blamaine Lap Feeds, Curled Hair Pickers, Needle Looms, etc.

WILLIAM SCHOFIELD COMPANY

Iron Founders, Textile Machinery Builders.
Krams Ave., Manayunk, Philadelphia, Pa.

Shafts, Pulleys, Hangers, Belting Packing, Lacing

BOILERS

For Mills and Public Works. Low Prices

Tanks, Stacks, Smoke Flues, Boiler Tubes, Pipe, Valves, Fittings, Kerosene and Gasoline Engines, Wood Saws, Pumps, Heaters, Injectors, Engine Supplies and Repairs for Mills, Hotels, Public Works.

Iron and Brass Castings Cast Every Day.

LOMBARD Foundry, Machine, Boiler Works, and Supply Store

AUGUSTA, GEORGIA

Not Only

Your Dye tubs
But your storage
Tanks and Towers
should be estimated
upon by us—

Ask for Bulletin A and D.

G. WOOLFORD WOOD TANK MANUFACTURING COMPANY

Lincoln Bldg. Philadelphia, Pa.

ALL STEEL **ECONOMY** FIRE PROOF **BALING PRESSES**

ALL SIZES FOR ALL PURPOSES

LARGEST LINE BUILT IN U.S.A.

ECONOMY BALER CO., DEPT C ANN ARBOR, MICH., U.S.A.

WATER

WE-FU-GO AND SCAIFE

PURIFICATION SYSTEMS
SOFTENING & FILTRATION
FOR BOILER FEED AND
ALL INDUSTRIAL USES

WM. B. SCAIFE & SONS CO. PITTSBURGH, PA.

BUYERS' INDEX—Continued.

DYESTUFFS AND CHEMICALS.
Arnold, Hoffman & Co.
Barrett Co.
Borne, Scrymser Co.
Bosson & Lane.
Central Dyestuff & Chemical Co.
Ciba Co., Inc.
Electro Bleaching Gas Co.
Ford Co., J. B.
Grasselli Chemical Co.
India Alkali Works.
Kali Mfg. Co.
Lennig & Co., Chas.
Mathieson Alkali Works, Inc.
Metz & Co., H. A.
National Aniline & Chemical Co.
Quaker City Chemical Co.
Roessler & Hasslacher Chemical Co.
New Brunswick Chemical Co.
Pennick & Ford, Ltd.
Rohm & Haas Co.
Sandoz Chemical Co.
Sonneborn Sons, Inc., L.
Staley Mfg. Co., A. E.
Stein, Hall & Co.
Surpass Chemical Co.
United Chemical Products Corp.
Wolf & Co., Jacques.

ELECTRIC CONDUIT AND FITTINGS.
(See Electrical Machinery and Supplies.)

ELECTRIC DYNAMOS AND MOTORS.
(See Motors and Generators.)

ELECTRIC FANS.
(See Fans—Electric.)

ELECTRIC LAMPS.
(See Lamps.)

ELECTRIC LAMP GUARDS.
Ivanhoe Regent Works.
Perry-Mann Electric Co.
Southern Elec. Supply Co.

ELECTRICAL ENGINEERS AND CONTRACTORS.
American Industries Eng'g Co.
Curtis Co., The.
Huntington & Guerry, Inc.
Panton, Harrison D.
Perry-Mann Electric Co
Standard Electric Co.
Walker Elec. & Plbg. Co.

ELECTRIC LIGHTING ENGINEERS.
(See Illuminating Engineers.)

ELECTRICAL MACHINERY, INSTRUMENTS AND SUPPLIES.
Allis-Chalmers Mfg. Co.
American Blower Co.
Bristol Co.
Carter Electric Co.
Cooper Hewitt Electric Co.
Curtis Co., The.
Cutter Works, George.
Euclid Crane & Hoist Co.
Fulton Supply Co.
General Electric Co.
Ivanhoe-Regent Works.
Perry-Mann Electric Co.
Seawell, Luke.
Southern Elec. Supply Co.
Standard Electric Co.
Sturtevant Co., B. F.
Walker Electric & Plbg. Co.
Walsh & Weidner Boiler Co.
Westinghouse Elec. & Mfg. Co.

ELECTRIC POWER.
(See Power.)

ELECTRIC PRESSES (HIGH-PRESSURE).
Rex Eng'g Corp.

ELECTRIC TRACTORS AND TRUCKS.
(See Tractors and Trucks—Electric.)

ELECTROTYPES.
Jacobs & Co.

ELEVATORS—PORTABLE.
Collins, J. D.
Euclid Crane & Hoist Co.

ELEVATORS.
Link-Belt Company.

ENAMELED IRON AND GLASS FOR TEXTILE MACHRY.
Mitchell-Bissell Co.

ENAMEL—MILL WHITE.
(See Paint.)

ENGINEERS—MILL.
(See Architects.)

ENGINES—OIL, GAS AND GASOLINE.
Allis-Chalmers Mfg. Co.
Fulton Supply Co.

ENGINES (STEAM).
Allis-Chalmers Mfg. Co.
American Blower Co.
Cole Mfg. Co., R. D.
Fulton Supply Co.
Lombard Iron Works & Supply Co.
Nashville Industrial Corp.
Schofield's Sons Co., J. S.
Toomey, Frank.

ENGINE ROOM APPLIANCES AND SUPPLIES.
American Blower Co.
Casey-Hedges Co.
Crane Co.
Fulton Supply Co.
Jenkins Bros.
Lunkenheimer Co.
Westinghouse Elec. & Mfg. Co.

ENGINEERS (CONSULTANT AND EFFICIENCY).
Ernst & Ernst.

ENGINEERS (TEXTILE AND MECHANICAL CONSULTING).
Panton, Harrison D.

ENGINEERS (INDUSTRIAL, CIVIL, CHEMICAL, TEXTILE, ARCHITECTURAL, ELECTRICAL).
American Industries Eng'g Co.

ENGRAVING AND CUTS.
Jacobs & Co.

ETCHING—(PRINTING).
Jacobs & Co.

EXHAUSTERS.
(See Blowers.)

EXPORTERS—COTTON.
(See Brokers.)

EXTRACTORS—HYDRO.
American Laundry Mchry. Co.
Fletcher Works.
Schaum & Uhlinger.
Tolhurst Machine Works.

FACTORY DESKS.
Lupton's Sons Co., David.

FACTORY AND INDUSTRIAL SITES.
(See Industrial Sites.)

FACTORY MANAGEMENT SYSTEMS.
Ernst & Ernst.

FANS—ELECTRIC.
American Blower Co.
Buckeye Blower Co.
Carter Electric Co.
General Electric Co.
Perry-Mann Electric Co.
Southern Electric Supply Co.
Westinghouse Elec. & Mfg. Co.

FANS—CONVEYING, POWER AND EXHAUST.
(See Blowers and Blowing Systems.)

FASTENERS—BELT.
(See Belt Fasteners.)

FEED WATER PURIFIERS.
(See Boiler Feed Water Purification.)

FEEDERS.
(See Automatic Feeders.)

FELT CLOTH FOR ROLLS.
Philadelphia Felt Co.

FELTING MACHINERY.
Proctor & Schwartz, Inc.

FENCE—STEEL AND IRON.
Anchor Post Iron Works.
Cyclone Fence Co.
Dowman, George.
Knapp Fence Co.

FENCE POSTS—CREOSOTED PINE.
Southern Wood Preserving Co.

FIBRE PRODUCTS.
National Vulcanized Fibre Co.
Standard Fibre Co.

FILLING—CAP AND WARP.
U S Bobbin & Shuttle Co.

FILTERS—WATER.
American Water Softener Co.
Norwood Engineering Co.
Scaife & Sons Co., Wm. B.

FILTERS—OIL REMOVAL.
Norwood Engineering Co.

FILTERS (ALUM).
Lennig & Co., Chas.

FILTER CLOTHS
Smith Mfg. Co.

FINISHING.
(See Dyers, Bleachers and Finishers.)

FINISHING, BLEACHING AND SIZING MATERIALS.
Arnold, Hoffman & Co.
Barrett Co.
Borne, Scrymser Co.
Bosson & Lane.
Central Dyestuff & Chemical Co.
Ciba Co., Inc.
Corn Products Refining Co.
Electro Bleaching Gas Co.
Ford Co., J. B.
India Alkali Works.
Kali Mfg. Co.
Keever Starch Co.
Lennig & Co., Chas.
Mathieson Alkali Works, Inc.
Metz & Co., H. A.
National Aniline & Chemical Co.
Roessler & Hasslacher Co.
New Brunswick Chemical Co.
Pennick & Ford, Ltd.
Quaker City Chemical Co.
Rohm & Haas Co.
Sandoz Chemical Co.
Sonneborn Sons, Inc., L.
Staley Mfg. Co., A. E.
Stein, Hall & Co.
United Chemical Products Corp.
Warren Soap Mfg. Co.
Wolf & Co., Jacques.

FIRE DOORS AND HARDWARE.
Bogert & Carlough.
Dowman-Dozier Mfg. Co.
Dowman, George.
Lupton Sons Co., David.
Sanymetal Products Co.
Truscon Steel Co.
Variety Fire Door Co.

FIRE HOSE.
(See Hose—Fire.)

FIRE PROTECTING PAINT.
(See Paint.)

FLAX SPINNING.
U. S. Bobbin & Shuttle Co.

FLEXIBLE COUPLINGS.
Allis-Chalmers Mfg. Co.
Cresson-Morris Co.

FLOOD LIGHTS—ELECTRIC.
Cooper Hewitt Electric Co.
Cutter Works, George.
Ivanhoe Regent Works.
General Electric Co.
Perry-Mann Electric Co.
Southern Electric Supply Co.

FLOORS (TAR CONCRETE).
Murphy's Sons, C. P.

FLOORING LUMBER.
Southern Cypress Mfg. Asso.
Southern Wood Preserving Co.

FLOORING—WOOD BLOCKS.
Southern Wood Preserving Co.

FLOOR SCRUBBING MACHINE
American Scrubbing Equipment Co.

FLOOR SCRUBBING POWDERS.
(See Scrubbing Powders.)

FLOOR SWEEPS.
(See Brushes.)

FLUTED ROLLS.
Howard & Bullough.
Proctor & Schwartz, Inc.
Saco-Lowell Shops.
Schofield & Sons, J. S.
Southern Spindle & Flyer Co.
Whitin Machine Works.

FOUNDERS.
Briggs-Schaffner Co.
Cole Mfg. Co., R. D.
Cresson-Morris Co.
Lombard Fdy. & Mch. Wks.

FOUNTAINS—DRINKING.
Crane Co.
Manufacturing Equip. & Eng'g Co.
Rundle-Spence Mfg. Co.
Taylor, Halsey W.

FRICTION CLUTCHES.
(See Clutches—Friction.)

FUEL ECONOMIZERS.
Sturtevant Co., B. F.

FURNITURE (FOLDING—CAMP)
Smith Mfg. Co.

FURNITURE—MILL.
Lyon Metallic Mfg. Co.
Manufacturing Equip. & Eng'g Co.
Royal Metal Mfg. Co.
Sanymetal Products Co.
Smith Mfg. Co.

FUSES—ELECTRIC.
Carter Electric Co.
Fulton Supply Co.
Perry-Mann Electric Co.
Seawell, Luke.
Southern Electric Supply Co.

GARAGES (PORTABLE—METAL).
Dowman, George.
Dowman-Dozier Mfg. Co.
Maryland Metal Bldg. Co.

GARNETT MACHINES.
Proctor & Schwartz, Inc.

GAS ENGINES.
(See Engines—Gas.)

GASOLINE LIGHTING SYSTEMS, LANTERNS, ETC.
Smith Mfg. Co.

GASOLINE CAMP STOVES.
Smith Mfg. Co.

GAUGES—STEAM PRESSURE, ETC.
Bristol Co.
Fulton Supply Co.
Foxboro Co., Inc.
Taylor Instrument Co.

GAUGE—OIL.
Fulton Supply Co.
Lunkenheimer Co.

GAUGES (LIQUID LEVEL).
Foxboro Co., Inc., The.
Taylor Inst. Co.

GAUGES—WATER.
Fulton Supply Co.
Lunkenheimer Co.

GEARS—SILENT.
Dodge Mfg. Co.
Fulton Supply Co.
General Electric Co.
Link-Belt Company.
Morse Chain Co.
Renold, Hans.

GEAR CUTTERS AND CUTTERS.
Cresson-Morris Co.

GEAR PULLERS.
General Electric Co.

GENERATORS—ELECTRIC.
(See Motors and Generators.)

GLOVES (ASBESTOS)
Oxweld Acetylene Co.

GOGGLES (WELDING).
Oxweld Acetylene Co.

GLASSWARE AND DISHES.
(See Dishes.)

GOVERNORS—PUMP.
General Electric Co.

GRAPHIC CHARTS.
Ernst & Ernst.

GRAPHITE.
Detroit Graphite Co.
Dixon Crucible Co., Jos.

GRATES—BOILER.
Casey-Hedges Co.
Cole Mfg. Co., R. D.
International Eng. Works.
Lombard Fdry. & Mch. Co.
Walsh & Weidner Boiler Co.

GRATES—MECHANICAL.
(See Stokers.)

GREASE.
(See Lubricants.)

GRAVEL AND SLAG ROOFING.
Murphy's Sons, C. P.

GREASE CUPS.
(See Lubricators.)

GRINDER—CARD, CYLINDER, ROLL, NAPPER AND GARNET.
(See Card Grinding Machinery.)

GUAGES (WELDING).
Oxweld Acetylene Co.

GUARDS—ELECTRIC LAMP.
(See Electric Lamp Guards.)

GUARDS—MACHINE, SKYLIGHT, WINDOW, ETC.
Anchor Post Iron Works.
Dowman, George.
Knapp Fence Co.

GUIDES—THREAD.
Mitchell-Bissell Co.
Palmer Co., I. E.

GUMS.
(See Finishing and Sizing Materials.)

HALFTONES—PRINTING.
Jacobs & Co.

HANGERS.
(See Shafting and Hangers.)

HANK CLOCKS.
(See Counters.)

HARDWARE—BUILDING.
Dowman, George.
Dowman-Dozier Mfg. Co.
Sanymetal Products Co.
Wagner Mfg. Co.

HARNESS—LOOM.
American Supply Co.
Atlanta Harness & Reed Mfg. Co.
Crompton & Knowles Loom Works.
Emmons Loom Harness Co.
Greist Mfg. Co.
Garland Mfg. Co.
Hayes Loom Reed & Harness Co.

HEADS—BOBBIN AND SPOOL.
Lestershire Spool & Bobbin Co.
Parker Co., Walter L.
U. S. Bobbin & Shuttle Co.

HEATING AND VENTILATING APPARATUS.
(See Ventilating Apparatus.)

HEATING & PLUMBING CONTRACTORS.
Walker Electric & Plbg. Co.

HEDDLES.
Crompton & Knowles Loom Works.
Draper Corporation.
Steel Heddle Mfg. Co.
Williams Co., J. H.

HEDDLE FRAMES.
Crompton & Knowles Loom Works.
Steel Heddle Mfg. Co.
Williams Co., J. H.

HOISTS.
Chisholm Moore Mfg. Co.
Curtis Pneumatic Mchry Co.
Euclid Crane & Hoist Co.
Fulton Supply Co.
Link-Belt Company.
Morse Chain Co.

HOPPER FEEDERS.
(See Automatic Feeders.)

HORNS AND MUSICAL INSTRUMENT.
Cable Piano Co.
Conn, Ltd., C. G.

HOSE—FIRE.
Collins, J. D.

HOSE (WELDING).
Oxweld Acetylene Co.

HOSIERY DYEING MACHINERY.
Cole Mfg. Co., R. D.
Franklin Process Co.
Philadelphia Drying Mchry. Co.

HOSIERY FORMS.
(See Drying Forms.)

HOSIERY YARNS.
(See Yarn Manufacturers.)

HOTELS.
Hotel Madison Square.
Hotel Martinique.
Hotel Tuller.
Kenilworth Inn.

HOUSES AND MILL COTTAGES (READY BUILT).
Minter Homes Co.

HUMIDIFYING APPARATUS.
American Blower Co.
American Moistening Co.
Carrier Eng. Corp.
Parks-Cramer Co.
Sturtevant Co., B. F.

HUMIDIFYING INDICATING INSTRUMENTS.
Bristol Co.
Foxboro Co., Inc., The.
Taylor Instrument Co.

HUMIDITY RECORDERS.
Foxboro Co., Inc., The.

HYDGRODEIKS.
Taylor Instrument Co.

HYGROMETERS.
Foxboro Co.
Taylor Instrument Co.

HYDRAULIC TURBINES.
(See Turbines—Hydraulic.)

HYDRO EXTRACTORS.
(See Extractors.)

ILLUMINATING ENGINEERS.
Cooper Hewitt Electric Co.
Curtis Co., The.
Huntington & Guerry.
Panton, Harrison D.
Ivanhoe-Regent Works.
Walker Elec. & Plbg. Co.
Westinghouse Elec. & Mfg. Co.

INDICATING AND RECORDING INSTRUMENTS AND THERMOMETERS.
Bristol Co.
Durant Mfg. Co.
Foxboro Co., Inc.
General Electric Co.
Root Co.
Taylor Instrument Co.

INDIGO.
(See Dyestuffs and Chemicals.)

INDUSTRIAL SITES.
Alabama Power Co.
Georgia Ry. & Power Co.
Nashville Industrial Corp.
Tennessee Electric Power Co.

INJECTORS.
Lunkenheimer Co.

INK—STENCIL AND MARKING.
Atlanta Stamp & Stencil Wks.
Bradley Mfg. Co., A. J.

INSURANCE.
Prudential Insurance Co.

IRON WORK—ORNAMENTAL.
American Fence Const. Co.
Anchor Post Iron Works.
Cyclone Fence Co.
Dowman, George.
Dufur & Co.

EMMONS LOOM HARNESS AND REEDS

Quality Products
Prompt Deliveries
Complete Satisfaction

In your dealings with us you are assured of Quality Products, Prompt Deliveries and Complete Satisfaction.

The quality of our products and the service we render are alone responsible for our steady growth year after year, and our present plant is the largest in America devoted to the manufacture of loom harness and reeds.

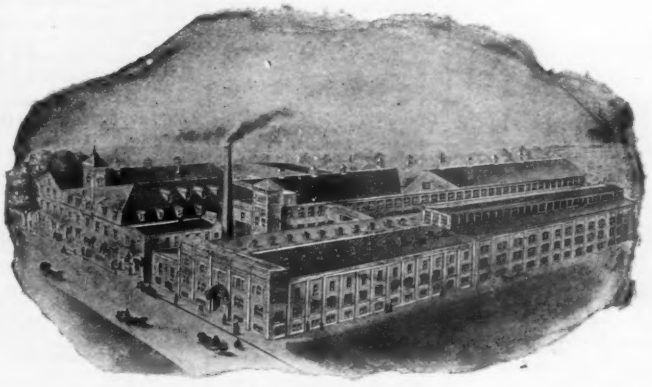
Southern Representative
Geo. F. Bahan

EMMONS LOOM HARNESS CO.,
LAWRENCE, MASS.

SOLE AGENTS FOR WARDWELL PICKERS.

The Largest Manufacturers of Loom Harness and Reeds in America.

COTTON HARNESS for all kinds of Plain and Fancy Weaves in Cotton and Silk Goods.
MAIL HARNESS for Cotton Duck, including Tire Duck, Worsted and Silk Goods.
SELVEDGE HARNESS, any depth up to 24 inches, for Weaving Tape Selvedges.
REEDS for Cotton, Woolen, Silk and Duck.
Slasher and Striking Combs, Warper and Liece Reeds, Beamer and Dresser Hecks.
Mending Eyes, Jacquard Heddles.
We make a specialty of equipping harnesses for the Drawing-In Machines.



COTTON MILL REPAIRS

SEND SAMPLES OF PARTS WANTED AND GET OUR PRICES. YOU DON'T HAVE TO BUY.

WE WILL SAVE YOU TIME

AND WON'T EXPECT YOUR ORDER IF WE CAN'T

SAVE YOU SOME MONEY TOO

Briggs-Shaffner Company

WINSTON-SALEM, N. C.

MACHINE WORK **FOUNDRY WORK**

BUYING A PIG IN A POKE

The buying of advertising space used to be buying "a pig in a poke." The quantity and quality of circulation was shrouded in mystery and often the bag was tied against investigation.

That day has passed. The advertiser no longer depends on "mere claims." The Audit Bureau of Circulation has untied the strings to the sack and the circulation of the better class of publications is thrown open for the most searching scrutiny.

In buying space in COTTON you are not buying "a pig in a poke." Our A. B. C. statements will stand the analysis of the most exacting investigator.

UCPC

Direct Sulphur Chrome } **Dyes** { **Acid Vat Basic**

Special Shades Matched

VELVETEEN

The Best Boil-off and Finish

Softeners *Oils* *Finishes*

UNITED CHEMICAL PRODUCTS CORPORATION

Importers, Exporters and Manufacturers

York & Colgate Sts. **Jersey City, N. J.**

Southern Office, 307 Commercial National Bank Building Charlotte, N. C.

REPRESENTATIVES:
R. T. GRANT, Charlotte, N. C.
GEO. W. WATSON, Hazlehurst, Miss.
C .D. MAIGATTER, Charlotte, N. C.

BUYERS' INDEX—Continued.

Knapp Fence Co.
Lombard Iron Works & Supply Co.

JACK SPOOLS.
(See Spools.)

JACQUARDS.
Crompton & Knowles Loom Works.

JOINT COMPOUND.
Dixon Crucible Co., Jos.

JUTE BAGGING MACHINE.
Proctor & Schwartz, Inc.

KETTLES—SIZE.
(See Size Kettles.)

KETTLES—SODA.
Lombard Iron Works & Supply Co.

KIERS.
(See Bleaching Kiers.)

KNIT GOODS.
(See Cotton Cloth Commission Merchants and Dealers.)

KNIT GOODS WASHERS.
(See Washers—Cloth.)

KNITTING MACHINERY AND SUPPLIES.
Brinton Co., H.
General Machine Works.
Hemphill Mfg. Co.
Scott & Williams.
Torrington Co.
Trump Bros. Machine Co.
Wildman Mfg. Co.

KNITTING NEEDLES.
Torrington Co.

KNOTTERS.
Barber-Colman Co.
Mill Devices Co.

LABORATORY INSTRUMENTS.
Bristol Co.
Scott & Co., Henry L.
Foxboro Co., Inc.
Root Co.
Taylor Instrument Co.

LACING—BELT.
(See Belt Lacing.)

LAMPS—INCANDESCENT AND ARC.
Carter Electric Co.
Cooper Hewitt Electric Co.
Curtis Co., The.
Cutter Works, George.
General Electric Co.
Ivanhoe-Regent Works of G. E. Co.
Perry-Mann Electric Co.
Seawell, Luke.
Southern Electric Supply Co.
Walker Electric & Plbg. Co.
Westinghouse Elec. & Mfg. Co.

LAMP GUARDS—KEY LOCKING.
(See Electric Lamp Guards.)

LAMP REFLECTORS.
Carter Electric Co.
Cooper Hewitt Electric Co.
Curtis Co., The.
Cutter Works, George.
Ivanhoe-Regent Works of G. E. Co.
Perry-Mann Electric Co.
Southern Electric Supply Co.
Walker Electric & Plbg. Co.
Westinghouse Elec. & Mfg. Co.

LANDSCAPE ARCHITECTS.
(See Village Architects.)

LAPPERS.
Saco-Lowell Shops.
Whitin Machine Works.

LATHES.
Fulton Supply Co.

LAUNDRY BAGS, BASKETS, & NETS.
Smith Mfg. Co.

LAUNDRY MACHINERY.
American Laundry Mchry. Co.
Fletcher Works.
Hunt Machine Co., Rodney.
Schaum & Uhlinger.
Tolhurst Machine Works.

LAVATORIES.
Crane Co.
Manufacturing Equip. & Eng'g Co.
Vogel Co., Jos. A.

LEAD BURNING APPARATUS (OXY-ACETYLENE AND OXY CITY GAS).
Oxweld Acetylene Co.

LEATHER BELTING.
(See Belting.)

LEATHER SPECIALTIES.
American Supply Co.
Bond Co., Chas.
Graton & Knight Mfg. Co.
Jacobs Mfg. Co., E. H.
Williams & Sons, I. B.

LIGHTS—FLOOD.
(See Flood Lights.)

LIGHTING ENGINEERS AND CONTRACTORS.
(See Illuminating Engineers.)

LINEN YARNS.
(See Yarns Linen.)

LINK BELTING.
(See Belting—Link.)

LINTERS.
(See Waste Dealers.)

LIQUID CHLORINE.
(See Chlorine.)

LOADERS—WAGON AND TRUCK.
Link-Belt Company.

LOCKERS—METAL.
Collins, J. D.
Dowman, George.
Lupton's Sons Co., David.
Lyon Metallic Mfg. Co.
Manufacturing Equip. & Eng'g Co.
Sanymetal Products Co.

LOGWOOD EXTRACT.
(See Dyestuffs and Chemicals.)

LOOMS.
Crompton & Knowles Loom Works.
Draper Corporation.
Fletcher Works.
Hopedale Mfg. Co.
Saco-Lowell Shops.
Schaum & Uhlinger.
Stafford Co.

LOOM ATTACHMENTS—AUTOMATIC.
Draper Corporation.
Hopedale Mfg. Co.

LOOM HARNESS.
(See Harness.)

LOOP PICKERS.
Jacobs Mfg. Co., E. H.

LUBRICANTS.
Dixon Crucible Co., Jos.
N. Y. & N. J. Lubricant Co.
Texas Co.

LUBRICATORS.
Lunkenheimer Co.
N. Y. & N. J. Lubricant Co.

LUG STRAPS.
(See Straps—Lug.)

LUMBER.
Southern Cypress Mfg. Asso.
Southern Wood Preserving Co.

LUNCH ROOM EQUIPMENT.
(See Restaurant.)

MACHINE GUARDS.
(See Guards—Machine.)

MACHINE TOOLS.
(See Tools.)

MACHINISTS.
Briggs-Schaffner Co.
Cole Mfg. Co., R. D.
Cresson-Morris Co.
Lombard Fdry. & Mch. Wks.

MANIFOLDS.
Oxweld Acetylene Co.

MARKING POTS, STENCILS, INKS, ETC.
Atlanta Stamp & Stencil Wks.
Bradley Mfg. Co., A. J.

MERCERIZED YARNS.
(See Yarn Manufacturers.)

MERCERIZERS.
Aberfoyle Mfg. Co.
Amer. Yarn & Processing Co.
Boger & Crawford.
Dixie Mercerizing Co.

MERCERIZED YARN.
Aberfoyle Mfg. Co.
American Yarn & Pro. Co.
Boger & Crawford Co.
Dixie Mercerizing Co.
Hunter Mfg. & Comm. Co.

MERCERIZING MACHINERY.
Butterworth, H. W. & Sons Co.
Textile Finishing Machinery Co.

METAL CEILINGS, ETC.
Dowman, George.
Dowman-Dozier Mfg. Co.
Lupton's Sons Co., David.
Truscon Steel Co.

METAL SIDING.
Dowman, George.
Dowman-Dozier Mfg. Co.

METALS—PERFORATED.
(See Screens and Sieves.)

METAL WORKS (SHEET).
Dowman-Dozier Mfg. Co.

METERS—FLOW, AIR, GAS, ELECTRIC, STEAM, ETC.
Allis-Chalmers Mfg. Co.
Carter Electric Co.
Foxboro Co., Inc.
General Electric Co.
Westinghouse Elec. & Mfg. Co.

METERS—COUNTING.
(See Counters.)

MILL BASKETS AND BOXES.
(See Boxes—Mill.)

MILL ENGINEER.
(See Architects and Engineers.)

MILL VILLAGES.
(See Villages.)

MILL SUPPLIES—MISCELLANEOUS.
(See Supplies—Mill.)

MILL WHITE PAINT.
(See Paint.)

MOPS.
Atlanta Brush Co.
Southwestern Broom Mfg. Co.

MOTION PICTURES.
(See Films.)

MOTORS AND GENERATORS—ELECTRIC.
Allis-Chalmers Mfg. Co.
American Blower Co.
Carter Electric Co.
Curtis Co., The.
Fulton Supply Co.
General Electric Co.
Nashville Industrial Corp.
Perry-Man Electric Co.
Southern Electric Supply Co.
Southern Electric Supply Co.
Standard Electric Co.
Sturtevant Co., B. F.
Walker Electric & Plbg. Co.
Westinghouse Elec. & Mfg. Co.

MOVING PICTURE MCH. AND SUPPLIES.
(See Theatre Equipment.)

NAPPER ROLL GRINDING MACHINES.
(See Card Grinders.)

MUSICAL INSTRUMENTS.
Cable Piano Co.
Conn, Ltd., C. G.

NEEDLES—KNITTING.
Torrington Co.

OFFICE EQUIPMENT & SUPPLIES.
Atlanta Stamp & Stencil Wks.
Dixie Seal & Stamp Co.
Jacobs & Co.
Knapp Fence Co.
Lupton's Sons Co., David.
Monroe Calculating Mch. Co.
Smith & Bros. Typewriter Co.
Sanymetal Products Co.

OFFICE PARTITIONS.
(See Partitions.)

OIL—LUBRICATING.
Johnson & Co., Inc., Oliver.
N. Y. & N. J. Lubricant Co.
Texas Co.
Wadsworth, Howland & Co., Inc.

OIL ENGINES.
(See Engines Oil.)

OILS—FINISHING.
(See Finishing and Sizing Materials.)

OIL CUPS.
(See Lubricants.)

OIL PAPER.
Bradley Mfg. Co., A. J.

OIL SEPARATORS.
(See Separators.)

OILING DEVICES.
(See Lubricators.)

OPENING MACHINERY—COTTON, WOOL, WASTE, ETC.
Murray Company, The.
Proctor & Schwartz, Inc.
Saco-Lowell Shops.
Schofield Co., Wm.
Whitin Machine Works.

OVERHEAD CARRIERS.
Chisholm-Moore Mfg. Co.
Curtis Pneumatic Mchry Co.
Dowman, George.
Euclid Crane & Hoist Co.
Wagner Mfg. Co.

OXIDIZING MACHINERY.
Phila. Dryinz Machinery Co.

OXY-ACETYLENE APPARATUS AND SUPPLIES.
Fulton Supply Co.
Oxweld Acetylene Co.
Standard Gas Products Co.

OXYGEN.
Oxweld Acetylene Co.
Standard Gas Products Co.

PACKING BOXES AND CASES—WOODEN.
Lewis Co., G. B.

PACKINGS.
Jenkins Bros.

PAINT.
American Cement Paint Co.
Barrett Co., The.
Coolidge & Sons, F. J.
Detroit Graphite Co.
DeVilbiss Mfg. Co.
Dixon Crucible Co., Jos.
Hockaday Co.
Johnson & Co., Oliver.
Sonneborn Sons, Inc., L.
St. Louis Surfacer & Paint Co.
Wadsworth, Howland & Co., Inc.
Ware Paint Co.

PAINT SPRAYING EQUIPMENT.
DeVilbiss Mfg. Co.
Stowe, Jr., Geo. M.

PAINTING CONTRACTORS.
(See Contractors.)

PANEL BOARD.
(See Switchboards.)

PAPER.
Bradley Mfg. Co., A. J.

PARTITIONS—STEEL AND WIRE.
Cyclone Fence Co.
Dowman, George.
Dowman-Dozier Mfg. Co.
Anchor Post Iron Works.
Knapp Fence Co.
Lupton's Sons Co., David.
Lyon Metallic Mfg. Co.
Manufacturers Equip. & Eng'g Co.
Sanymetal Products Co.

PAVING BRICKS.
National Paving Brick Mfg. Asso.

PERBORATE OF SODA.
Roessler & Hasslacher Chemical Co.

PERFORATED METAL.
(See Screens and Sieves.)

PEROXIDES.
Roessler & Hasslacher Chemical Co.

PICK COUNTERS.
(See Counters.)

PICKERS—CURLED HAIR.
Proctor & Schwartz, Inc.
Schofield Co., Wm.

PICKERS—LEATHER.
Bond Co., Chas.
Garland Mfg. Co.
Jacobs Mfg. Co., E. H.

PICKER LOOPS.
Jacobs Mfg. Co., E. H.

PICKER BAGS.
Smith Mfg. Co.

PICKER CONE BELT TENSION DEVICE.
Bahan Textile Mch. Co.

PICKER STICKS.
Garland Mfg. Co.

PICKING MACHINERY.
Howard & Bullough Am. Machine Co.
Proctor & Schwartz, Inc.
Saco-Lowell Shops.
Schofield Co., Wm.
Whitin Machine Works.

PINIONS.
General Electric Co.

PIPE—STEEL RIVETED.
Fulton Supply Co.
Youngstown Sheet & Tube Co.

PIPE AND PIPE FITTINGS.
Crane Co.
Fulton Supply Co.
Lunkenheimer Co.
Parks-Cramer Co.
Scaife & Sons Co., Wm. B.
Walker Electric & Plbg. Co.

PIPE JOINT COMPOUND.
Dixon Crucible Co., Jos.
Fulton Supply Co.

PIPING—COTTON.
Youngstown Sheet & Tube Co.

PIPING ENGINEERS.
Walker Electric & Plbg. Co.

PIPE BENDING.
Youngstown Sheet & Tube Co.

PLAYGROUND APPARATUS & EQUIPMENT.
Crane Co.
Hill Standard Co.
Manufacturing Equip. & Eng'g Co.
Rundle-Spence Mfg. Co.
Taylor, Halsey W.

PLUMBING AND HEATING CONTRACTORS.
Walker Electric & Plbg. Co.

PNEUMATIC COLLECTING & CONVEYING SYSTEMS.
Sturtevant Co., B. F.

PNEUMATIC MACHINERY & TOOLS.
Curtis Pneumatic Mchry. Co.

PORCELAIN GUIDES.
Mitchell-Bissell Co.

PORTABLE HOUSES AND GARAGES (STEEL).
Dowman, George.
Dowman-Dozier Mfg. Co.
Maryland Metal Bldg. Co.

PORTABLE CONVEYORS.
(See Conveyors.)

POSTS—FENCE (WOOD).
Southern Wood Preserving Co.

POWER—ELECTRIC.
Alabama Power Co.
Georgia Ry. & Power Co.
Tennessee Electric Power Co.

POWER TRANSMISSION EQUIPMENT.
Aldrich Machine Works.
Allis-Chalmers Mfg. Co.
Bond Co., Chas.
Bristol Co.
Carlyle-Johnson Mch. Co.
Cresson-Morris Co.
Clipper Belt Lacer Co.
Detroit Belt Lacer Co.
Dixon Crucible Co., Jos.
Dodge Mfg. Co.
Fafnir Bearing Co.
Fulton Supply Co.
General Electric Co.
Graton & Knight Mfg. Co.
Hyatt Roller Bearing Co.
Link-Belt Company.
Morse Chain Co.
Renold, Inc., Hans.
Rhoads & Sons, J. E.
Skayef Ball Bearing Co.
Transmission Ball Bearing Co.
U. S. Ball Bearing Co.
Westinghouse Elec. & Mfg. Co.
Williams & Sons, I. B.

PREHEATING APPARATUS.
Oxweld Acetylene Co.

PRESERVATIVE PAINT FOR METAL WORK.
(See Paints.)

PRESSED STEEL.
Lupton's Sons Co., David.

PRESSES.
American Laundry Mchry. Co.
Butterworth & Sons Co., H. W.
Economy Baler Co.
Logemann Bros. Co.
Phila. Drying Mch. Co.
Proctor & Schwartz, Inc.
Reliance Machine Works.
Rex Eng'g Corp.
Textile Finishing Machinery Co., The.

PRESSURE GAUGES.
(See Gauges.)

PRESSURE GAUGES.
(See Gauges.)

PRESSURE REGULATORS.
(See Regulators—Pressure.)

PRINTERS (CLOTH).
(See Dyers.)

PRINTING.
Jacobs & Co.
Showalter Printing Co., A. J.

PRINTING EXTRACTORS—HYDRO.
Tolhurst Machine Works.

PROPELLER FANS.
(See Blowers.)

PSYCHROMETERS.
Bristol Co.
Foxboro Co., Inc., The.

PULLEYS.
Cole Mfg. Co., R. D.
Cresson-Morris Co.
Dodge Mfg. Co.
Fulton Supply Co.
Link-Belt Company.
Renold, Inc., Hans.

PULLEY COVERING.
Williams & Sons, I. B.

PUMPS.
Allis-Chalmers Mfg. Co.
Fulton Supply Co.
Goulds Mfg. Co.
Sydnor Pump & Well Co., Inc.
Toomey, Frank.
Walsh & Weidner Boiler Co., The.
Westinghouse Elec. & Mfg. Co.

PUMPS—OIL.
Lunkenheimer Co.

PUMP VALVES.
(See Valve Discs.)

PYROMETERS.
Bristol Co.
Foxboro Co.
Taylor Instrument Co.

QUILLS.
Jordan Mfg. Co.
U. S. Bobbin & Shuttle Co.

QUILL CLEANING MACHINES.
Terrell Machine Co.
Southern Railway System.

RECEPTACLES—FIBRE.
(See Fibre Products.)

RECORDING INSTRUMENTS.
Bristol Co.
Durant Mfg. Co.
Foxboro Co., Inc.
General Electric Co.
Taylor Instrument Co.

REEDS.
American Supply Co.
Atlanta Harness & Reed Mfg. Co.
Emmons Loom Harness Co.
Hayes Loom Reed & Harness Co.

REELS.
Crompton & Knowles Loom Works.
Draper Corporation.

ELECTRIC WIRING CONTRACTOR

POWER

THE CURTIS CO.
Chattanooga, Tenn.
TEXTILE WORK A SPECIALTY

FULTON SUPPLY CO.
70 NELSON ST., ATLANTA, GA.
Get Our Prices on
BOBBINS — SPOOLS — TRAVELERS —
CHECK STRAPS AND TEXTILE SUPPLIES

LEATHER BELTING
TRANSMISSION EQUIPMENT
PIPE
VALVES AND FITTINGS
PUMPS
MOTORS
LATHES
MACHINE TOOLS
WELDING OUTFITS AND SUPPLIES
ELECTRIC DRILLS
ETC.

COMPLETE STOCKS MILL SUPPLIES AND MACHINERY
Quality—Service—Right Prices

J. D. Collins Sales & Eng'g. Co.
STORAGE AND INDOOR TRANSPORTATION EQUIPMENT
55½ Luckie St.
Atlanta, Ga.
Equipment that will reduce your storage and handling expenses. Tiering Machines, Electric and Hand Trucks, Overhead Carriers, Gravity and Power Conveyors of all kinds.
Catalogs and full information furnished upon request

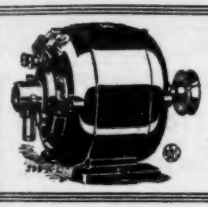
HARRISON D. PANTON, E. E.
Consulting Engineer
Electrical Textile Mechanical
Design, Consultation, Tests, Investigations, Appraisals, and Reports.
GILMER BLDG. RALEIGH, N. C.

LAMPS! LAMPS!
Manufacturers Licensed Under G. E. Patents

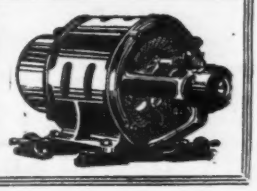
FUSES, FUSE PLUGS, SOCKETS, ETC.
GET PRICES AND DISCOUNTS
LUKE SEAWELL, Distributor
420 AUSTELL BUILDING ATLANTA, GA.

SOUTHERN ELECTRIC SUPPLY CO.
DISTRIBUTORS
81 Marietta St. Atlanta, Ga.
COMPLETE line electrical supplies for every purpose, including Buckeye Mazda Lamps, Emerson Fans, safety switches, fuses, wires, cables, conduit and fittings, etc.
Send us your inquiries.
Quotations cheerfully submitted.
"Southern Service Satisfies"

SYDNOR PUMP & WELL CO., INC.
RICHMOND, VIRGINIA
DEEP WELL DRILLING—WATER SUPPLY ENGINEERS
Twenty-Five Years Experience in Solving Water Problems
LUITWIELER NON-PULSATING DEEP WELL PUMPS
The Most Efficient Water Supply Equipment Made.



STANDARD ELECTRIC COMPANY
ELECTRICAL MACHINERY REPAIRED
Motors — Generators — Transformers — Armature Rewinding
1821 EAST MAIN ST. RICHMOND, VA.



BUYERS' INDEX—Continued.

Gallaudet Aircraft Corporation.
Hunt Machine Co., Rodney.
Mossberg Pressed Steel Co.
Saco-Lowell Shops.
Schofield Co., Wm.
Whitin Machine Works.

REFLECTORS—LAMPS.
(See Lamp Reflectors.)

REGULATORS—LIQUID LEVEL.
Foxboro Co., Inc.
General Electric Co.

REGULATORS (COMPRESSED GAS).
Oxweld Acetylene Co.

REGULATORS—PRESSURE.
Bristol Co.
Foxboro Co., Inc., The.
General Electric Co.
Taylor Instrument Co.

REGULATORS—TEMPERATURE.
(See Temperature Controllers.)

REINFORCING SLAG.
Birmingham Slag Co.

REPAIRING—ELECTRICAL.
Briggs-Shaffner Co.
Curtis Co., The.
Southern Electrical Supply Co.
Huntington & Guerry, Inc.
Westinghouse Elec. & Mfg. Co.

REPAIRING—TEXTILE MACHINERY, ETC.
Briggs-Shaffner Co.
General Machine Works.
Southern Spindle & Flyer Co.
Standard Electric Co.
Standard Gas Products Co.

RESTAURANT EQUIPMENT.
Sanymetal Products Co.

RIBBERS.
(See Knitting Machinery.)

RIB TOP CUTTERS.
General Machine Works.
Wildman Mfg. Co.

RING TRAVELERS—STEEL AND BRONZE.
Whitinsville Spinning Ring Co.
Whitin Machine Works.

RINGS—SPINNING.
(See Spinning Rings.)

ROCKER SHAFT BEARINGS.
(See Bearings.)

RODS (WELDING).
Oxweld Acetylene Co.

ROLLS—CALENDER.
Butterworth & Sons Co., H. W.
Textile Finishing Mchy. Co.
U. S. Bobbin & Shuttle Co.
Washburn & Sons, L. R.

ROLLS—RUBBER COVERED.
Butterworth & Sons Co., H. W.
Textile Finishing Mchy. Co.
Washburn & Sons, L. R.

ROLLS—STEEL.
Butterworth & Sons Co., H. W.
Southern Spindle & Flyer Co.
Textile Finishing Mchy. Co.
U. S. Bobbin & Shuttle Co.
Washburn & Sons, L. R

ROLLS (WOODEN).
U S Bobbin & Shuttle Co.
Washburn & Sons, L. R.

ROLL BEARINGS.
Hyatt Roller Bearing Co.

ROLLER LEATHER.
Bond & Co., Chas.

ROOFING.
Barrett Co.
Cortright Metal Roofing Co.
Dowman, George.
Dowman-Dozier Mfg. Co.
Murphy's Sons, C. P.
Richardson Co.
Southern Wood Preserving Co.
Wadsworth, Howland & Co.

ROOFERS.
Dowman, Geo.
Dowman Dozier Mfg. Co.
Murphy's Sons, C. P.

ROOFS WATERPROOFED AND INSULATED.
Murphy's Sons, C. P.

ROOFING AUXILIARIES (PIPE SUTTERS—EAVE TROUGH—ETC.)
Dowman, George.
Dowman-Dozier Mfg. Co.

ROOF AND CEMENT COATING.
American Cement Paint Co.
Barrett & Co.
Cooledge & Sons, F. J.
Detroit Graphite Co.
Hockaday Co.
Johnson & Co., Inc., Oliver.
Murphy's Sons, C. P.
Sonneborn Sons, Inc., L.
Wadsworth, Howland & Co.
Ware Paint Co.

ROPE—TRANSMISSION.
Allis-Chalmers Mfg. Co.
Cresson-Morris Co.
Link-Belt Company.

ROVING CANS.
(See Cans—Roving.)

ROVING MACHINERY.
Howard & Bullough.
Saco-Lowell Shops.
Whitin Machine Works.

RUBBER SPECIALTIES (TEXTILE MILLS).
Textile Rubber Co.

RUBBER STAMPS.
(See Stamps, Stencils, Etc.)

SALTS.
(See Finishing & Sizing Materials.)

SAND BLAST DEVICE.
Stowe, Jr., Geo. M.

SASH OPERATOR (WINDOW).
Callahan Co., T. J
Dowman, George.

SANITARY PRODUCTS.
Crane Co .
Manufacturing Equip. & Eng'g Co.
Rundle-Spence Mfg. Co.
Sanymetal Products Co.
Taylor, Halsey W.
Vogel Co., Jos. A.
Walker Electric & Plbg. Co.

SASH-WINDOW—STEEL.
(See Window Sash.)

SAXOPHONES, ETC.
(See Musical Instruments.)

SCALES.
Toledo Scale Co.

SCALE PREVENTER—BOILER.
(See Boiler Feed Water Purification.)

SCREENS—MOVING PICTURE.
Southern Theatre Equip. Co.

SCREENS AND SIEVES—PERFORATED.
Allis-Chalmers Mfg. Co.
Erdle Perforating Co.
Knapp Fence Co.
Link-Belt Company.

SCOURING MACHINERY.
(See Washers—Cloth.)

SCRUBBING MACHINE—FLOOR.
American Scrubbing Equip. Co.

SCRUBBING AND WASHING POWDERS.
Mathieson Alkali Works.
India Alkali Works.
Warren Soap Mfg. Co.

SCUTCHERS.
Whitin Machine Works.

SECOND HAND MACHINERY AND SUPPLIES.
Nashville Industrial Corp.
Toomey, Frank, Inc.

SELVAGE HARNESS.
(See Harness.)

SEWING MACHINES.
Merrow Machine Co., The.
Textile Finishing Mchry. Co.

SHADES—ELECTRIC LAMP.
(See Reflectors.)

SHADES (WINDOW).
Aeroshade Co.

SHAFTING AND HANGERS.
Allis-Chalmers Mfg. Co.
Cresson-Morris Co.
Dodge Mfg. Co.
Fafnir Bearing Co.
Fulton Supply Co.
Hyatt Roller Bearing Co.
Link-Belt Company.
Skayef Ball Bearing Co.
Transmission Ball Bearing Co.

SHELVING—SECTIONAL STEEL.
Collins, J. D.
Dowman, George.
Dowman-Dozier Mfg. Co.
Hyatt Roller Bearing Co.
Lupton's Sons Co., David.
Lyon Metallic Mfg. Co.
Manufacturing Equip & Eng'g Co.
Sanymetal Products Co.

SHINGLES—ASPHALT.
Barrett Co.
Dowman, George.
Dowman-Dozier Mfg. Co.

SHINGLES—METAL.
Cortright Metal Roofing Co.
Dowman, George.
Dowman-Dozier Mfg. Co.

SHINGLES—WOOD.
Southern Cypress Mfg. Assn
Southern Wood Preserving Co.

SHIPPING ROOM MACHINERY AND SUPPLIES.
Atlanta Stamp & Stencil Wks.
Bradley Mfg. Co., A. J.
Collins, J. D.
Dixie Seal & Stamp Co.
Lewis Co., G. R.
Lyon Metallic Mfg. Co.
Smith Mfg. Co.
Standard Fibre Co.
Toledo Scale Co.

SHOWER BATHS AND CABINETS.
Crane Co.
Lyon Metallic Mfg. Co.
Sanymetal Products Co.

SHUTTLES.
Crompton & Knowles Loom Works.
Draper Corporation.
Jordan Mfg. Co.
U S Bobbin & Shuttle Co.
Williams Co., J. H.

SINGEING MACHINERY.
Butterworth & Sons Co., H. W.
Phila. Drying Machine Co.
Textile Finishing Machinery Co., The.

SITES FOR FACTORIES.
(See Industrial Sites.)

SIZE BOX TEMPERATURE CONTROLLER.
Bristol Co.
Foxboro Co., Inc., The.

SIZE KETTLES AND TANKS.
(See Bleaching Kiers or Tanks.)

SIZING AND FINISHING COMPOUNDS.
(See Finishing and Sizing Materials.)

SKEWERS.
Jordan Mfg. Co.

SKYLIGHTS.
Dowman, George.
Dowman-Dozier Mfg. Co.
Knapp Fence Co.
Lupton's Sons Co., David.

SLAG FOR CONCRETE.
Birmingham Slag Co.

SLASHERS AND SLASHER ROOM SUPPLIES.
Butterworth & Sons Co., H. W.
Cole Mfg. Co., R. D.
Howard & Bullough.
Mossberg Pressed Steel Corp.
Saco-Lowell Shops.
Textile Finishing Machinery Co., The.

SLASHER HOODS.
Cole Mfg. Co., R. D.

SLASHER TAPE.
(See Tape—Slasher.)

SLATE ASPHALT ROOFING.
Barrett Co.

SLIDING PARTITION HARDWARE.
Dowman, George.
Dowman-Dozier Mfg. Co.
Lupton's Sons Co., David.
Lyon Metallic Mfg. Co.
Manufacturing Equip. & Eng'g Co.
Sanymetal Products Co.
Wagner Mfg. Co.

SLUBBERS.
Howard & Bullough.
Saco-Lowell Shops.
Whitin Machine Works.

SMOKE SCREENS.
Dowman, George.

SMOKE STACKS.
Casey-Hedges Co.
Dowman-Dozier Mfg. Co.
Wash & Weidner Boiler Co.

SOAPS—TEXTILE.
Arnold, Hoffman & Co.
Borne, Scrymser Co.
Ciba Co., Inc.
India Alkali Works.
Kali Mfg. Co.
Lennig & Co., Chas.
Mathieson Alkali Works, Inc.
Rohm & Haas Co.
Sonneborn Sons, Inc., L.
Stein, Hall & Co.
United Chemical Products Corp .
Warren Soap Mfg. Co.
Wolf & Co., Jacques.

SOFTENERS—COTTON.
(See Finishing & Sizing Materials.)

SOFTENERS—WATER.
(See Water Softeners.)

SOLDERLESS CONNECTORS—FRANKEL.
Westinghouse Elec. & Mfg. Co.

SOLOZONE.
Roessler & Hasslacher Chem. Co.

SOLVENTS.
(See Finishing.)

SPEEDERS.
Jordan Mfg. Co.
Parker & Co., Walter L.
U S Bobbin & Shuttle Co.
Vermont Spool & Bobin Co.

SPEEDOMETERS.
(See Counters.)

SPINDLES.
Draper Corporation.
Saco-Lowell Shops.
Southern Spindle & Flyer Co.
Vermont Spool & Bobbin Co.
Whitin Machine Works.

SPINNERS.
(See Yarn Manufacturers.)

SPINNING FRAMES.
American Machine Co., H. & B.
Crompton & Knowles Loom Works.
Howard & Bullough.
Schaum & Uhlinger.
Saco-Lowell Shops.
Whitin Machine Works.

SPINNING RINGS.
Draper Corporation.
Fulton Supply Co.
Howard & Bullough.
Gredat Mfg. Co.
Whitin Machine Works.
Whitinsville Spinning Ring Co.

SPINNING TAPE SPECIALISTS.
American Textile Banding Co., Inc.
Barber Mfg. Co.

SPOOLING MACHINERY AND SUPPLIES.
Barber-Colman Co.
Draper Corporation.
Foster Mch. Co.
Mill Devices Co.
Proctor & Schwartz, Inc.
Saco-Lowell Shops.
Whitin Machine Works.

SPOOLS AND SKEWERS.
Fulton Supply Co.
Jordan Mfg. Co.
Lestershire Spool & Mfg. Co.
Mossberg Pressed Steel Corp.
Parker Co., Walter L.
Textile Rubber Co.
U S Bobbin & Shuttle Co.
Vermont Spool & Bobbin Co.

SPRAYING DEVICE FOR PAINTING.
(See Paint Spray.)

SPRINKLER SYSTEMS.
American Moistening Co.

SPRINKLER TANKS.
(See Tanks, Towers, Etc.)

SPROCKETS.
Link-Belt Company.
Morse Chain Co.
Renold, Inc., Hans.

SPUR CAP SHELLS.
Gallaudet Aircraft Corporation.

STAMPS, STENCILS AND STENCIL MACHINES.
Atlanta Stamp & Stencil Wks.
Bradley Mfg. Co., A. J.
Dixie Seal & Stamp Co.

STAND PIPES.
(See Tanks.)

STARCH AND GUMS.
Arnold, Hoffman & Co.
Borne, Scrymser Co.
Bosson & Lane.
Ciba Co.
Corn Products Refining Co.
Kali Mfg. Co.
Keever Starch Co.
Mathieson Alkali Works, Inc.
Metz Co., H. A.
Pennick & Ford, Ltd.
Sonneborn Sons, Inc., L.
Staley Co., A. E.
Stein, Hall & Co.
Warren Soap Co.

STEAM ENGINES.
(See Engines—Steam.)

STEAM HOSE.
(See Hose—Fire.)

STEAM PUMPS.
(See Pumps—Steam.)

STEAM SEPARATORS.
(See Separators.)

STEAM TRAPS.
(See Traps—Steam.)

STEEL BUILDINGS.
Bogert & Carlough.
Dowman, George.
Maryland Metal Bldg. Co.

STEEL SASH.
(See Sash—Steel.)

STEEL SHELVING, DOORS, WINDOWS PARTITIONS, ETC.
Bogart & Carlough.
Dowman, George.
Dowman-Dozier Mfg. Co.
Collins, J. D.
Lupton & Sons Co., David.
Lyon Metallic Mfg. Co.
Manufacturing Equip. & Eng'g Co.
Sanymetal Products Co.
Truscon Steel Co.

STEELS (STRUCTURAL).
Dowman, George.
Bogart & Carlough.

STENCILS AND STENCIL PAPERS.
(See Stamps and Stencils.)

STENCIL BRUSHES.
(See Marking Pots and Brushes.

STENCIL CUTTING MACHINES.
Atlanta Stamp & Stencil Wks.
Bradley Mfg. Co., A. J.
Dixie Seal & Stamp Co.

STICKS—PICKER.
(See Picker Sticks)

STOOLS.
(See Furniture—Mill.)

STOP WATCHES.
Bristol Co.
Silberberg, Mortimer J.

STOP MOTION.
Crompton & Knowles Loom Works.
Draper Corporation.
Eclipse Textile Devices, Inc.
Whitin Machine Works.
Wildman Mfg. Co.

STOKERS.
Westinghouse Elec. & Mfg. Co.

STORAGE RACKS.
(See Shelving.)

STRAPS (LUG, CHECK, HEEL, TUGGER, PICKER HARNESS, ETC.)
Atlanta Harness & Reed Co.
Bond Co., Chas.
Fulton Supply Co.
Hayes Loom Harness & Reed Co.
Jacobs Mfg. Co., E. H.
Garland Mfg. Co.

STRAPPING.
(See Leather Specialties or Check Straps.)

STREET LIGHTING FIXTURES.
Cutter Works, George.

SULPHIDES.
(See Finishing & Sizing Materials.)

SULPHUROUS ACID GENERATOR.
Macomb Machine Co.

SWINGS (PLAYGROUND).
(See Playground Equipment.)

SUPPLIES—GENERAL MILL.
Dodge Mfg. Co.
Fulton Supply Co.
Jenkins Bros.
Link-Belt Co.
Lunkenheimer Co.
Morse Chain Co.
Nashville Industrial Corp.
Rhoads & Sons, J. E.
Williams & Sons, I. B.

SUPPLIES (OFFICE).
(See Office Equipment.)

SWITCHES—KNIFE-ELECTRIC.
Cutter Works, George.
Fulton Supply Co.
General Electric Co.
Westinghouse Elec. & Mfg. Co.

SWITCHBOARDS—PANEL.
Cutter Works, George.
General Electric Co.
Westinghouse Elec. & Mfg. Co.

SYSTEMS (BUSINESS).
Ernst & Ernst.

TAPES—MILL.
Lupton's Sons Co., David.
Lyon Metallic Mfg. Co.
Manufacturing Equip. & Eng'g Co.
Sanymetal Products Co.

TACHOMETERS (RECORDING AND INDICATING).
Bristol Co.
Foxboro Co., Inc., The.
Root Co.

TALLOW.
(See Finishing Machinery.)

TANKS (ELEVATED).
Casey-Hedges Co.
Cole Mfg. Co., R. D.
Dowman-Dozier Mfg. Co.
Godfrey Conveyor Co.
Lombard Iron Works.
Walsh & Weidner Boiler Co
Woolford Wood Tank Co., G.

TANKS (SPRINKLER).
Cole Mfg. Co., R. D.
Lombard Iron Works.
Woolford Wood Tank Co., G.

TANKS (STEEL STORAGE).
Dowman-Dozier Mfg. Co.
Cole Mfg. Co., R. D
Godfrey Conveyor Co.
Lombard Iron Works.
Walsh & Weidner Boiler Co.

TANKS (WOODEN).
Cocker Mch. & Fdry. Co.
Philadelphia Drying Mchry. Co.
Proctor & Schwartz, Inc.
Textile Finishing Mchry. Co.
Woolford Wood Tank Co., G.

TAPE LOOMS—COTTON.
Foster Mch. Co.
Fletcher Works.
Schaum & Uhlinger.

No Idle Spindles or Soft Bobbins When Barber Tape is Used

Barber tape is of just the proper weight and construction to insure smooth, steady operation. They had to be perfect, or the name Barber would never have been put on them and the fact that they are preferred is proved by the fact that 90% of new tape drive cotton frames, put on the market in the past ten years have been equipped with Barber Tapes.

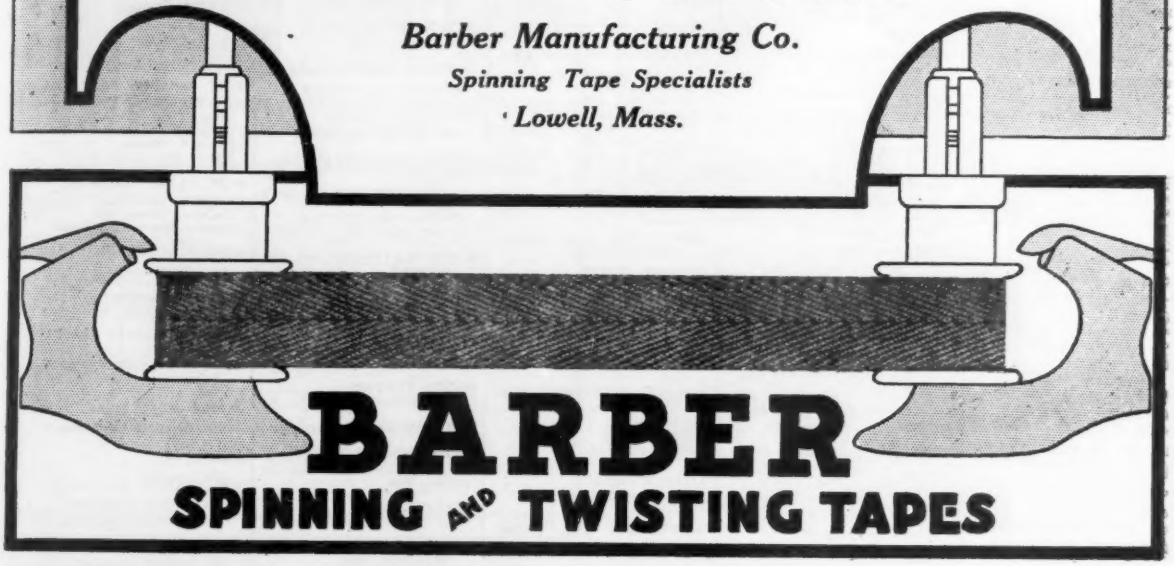
Barber Tapes have the quality of materials, quality of workmanship and a long established reputation to maintain that is assurance to the country's leading textile engineers that they are the best that can be secured.

And Barber service is prompt and satisfying. Write or wire for prices.

Barber Manufacturing Co.

Spinning Tape Specialists

Lowell, Mass.



BARBER

SPINNING AND TWISTING TAPES

PUMPS

INDUSTRIAL — AGRICULTURAL — MUNICIPAL — RESIDENTIAL

A type for every service.
Bulletins on request.

The Goulds Manufacturing Company
SENECA FALLS, N. Y.

GOULDS

SOFT WATER - CLEAR WATER
FOR EVERY PURPOSE

DECALSO ZERO WATER SOFTENERS
LIME AND SODA WATER SOFTENERS
PRESSURE AND GRAVITY FILTERS

SOFTENER

FOR PARTICULARS ADDRESS
AMERICAN WATER SOFTENER CO.
LEHIGH AVE. AT 4TH ST.
PHILADELPHIA, PA.

FILTER

EUROPEAN PLAN
Rooms **600** Baths
Headquarters in Detroit for
OLD COLONY CLUB
DETROIT AUTOMOBILE CLUB

. . . DAILY RATES . . .
$2.50 up single
$5.00 up double
Two Floors of Agents' Sample Rooms—$5.00 per Day

Table d'Hote Dinner, $1.25
Business Men's Lunch, 65c

HOTEL TULLER
CAFETERIA O. C. FROMAN, Mgr. GRILLE

BUYERS' INDEX—Continued.

TAPES AND BRAIDS.
American Textile Banding Co., Inc.
Barber Mfg. Co.
Weimar Brothers.

TAPES—SPINNING AND TWISTING.
Barber Mfg. Co.

TAPE MAKING MACHINES.
(See Bandage and Tape Machinery.)

TAPIOCA FLOUR.
Stein, Hall & Co.

TARPAULINS.
Smith Mfg. Co.

TAX SERVICE.
Ernst & Ernst.

TELEPHONE—CALLING SYSTEM.
Carter Electric Co.
General Electric Co.

TEMPERATURE REGULATORS.
Bristol Co.
Carrier Eng. Corp.
Foxboro Co., Inc., The.
General Electric Co.
Parks-Cramer Co.
Taylor Instrument Co.

TEMPLES.
Draper Corporation.

TENTS (ALL KINDS).
Smith Mfg. Co.

TENTERS.
Butterworth & Sons Co., The
Textile Finishing Mach. Co.

TENTER HOUSING & RECONSTRUCTING SYSTEM.
Proctor & Schwartz, Inc.

TENTER FRAME DRYERS.
Sturtevant Co., B. F.

TESTERS FOR YARN, FABRIC CORD, ROPE, RUBBER, WIRE, ETC.
Scott & Co., Henry L.

TEXTILE MACHINERY.
(See Cotton Mill Machinery.)

THEATRE EQUIPMENT.
Southern Theatre Equip. Co.

THERMOMETERS—ANGLE AND STRAIGHT STEM.
Bristol Co.
Foxboro Co., Inc., The.
Taylor Instrument Co.

THERMOMETERS—RECORDING AND INDEX.
Bristol Co.
Foxboro Co.
Taylor Instrument Co.

THERMOSTATS.
Bristol Co.
Foxboro Co.

THIN PLACE PREVENTERS.
Draper Corporation.

THREAD GUIDES.
Mitchell-Bissell Co.
Palmer Co., The L. E.

TILE ROOFING.
Richardson Co.

TIMBER.
(See Lumber.)

TIME CLOCKS.
(See Clocks.)

TIME RECORDERS.
Bristol Co.

TIERING MACHINES.
Collins, J. D.

TIES—BALING.
(See Bale Ties.)

TIRE FABRIC EQUIPMENT.
Fletcher Works.

TOILETS.
Crane Co.
Rundle-Spence Mfg. Co.
Vogel Co., Jos. A.

TOILET PARTITIONS.
Dowman, George.
Dowman-Dozier Mfg. Co.
Lupton's Sons Co., David.
Manufacturing Equip. & Eng'g Co.
Sanymetal Products Co.

TOOL CABINETS—STEEL.
Lupton's Sons Co., David.
Lyon Metallic Mfg. Co.
Manufacturing Equip. & Eng'g Co.

TOOL STANDS—STEEL.
Lupton's Sons Co., David.

TORCHES (BRAZING, CUTTING AND WELDING).
Oxweld Acetylene Co.
Standard Gas Products Co.

TOOLS (MACHINE).
Fulton Supply Co.

TOP FLATS RECOVERED.
Howard Bros. Mfg. Co.

TOWERS.
(See Tanks—Elevated.)

TRACTORS—ELECTRIC, INDUSTRIAL.
Collins, J. D.

TRANSMISSION—POWER.
(See Power Transmission Machinery.)

TRAPS—RETURN STEAM.
American Blower Co.
Morehead Mfg. Co.

TRAVELERS.
Fulton Supply Co.
Whitinsville Spinning Ring Co.

TRIPTODS.
U S Bobbin & Shuttle Co.

TROLLEYS & HOISTS.
Chisholm-Moore Mfg. Co.
Curtis Pneumatic Machy. Co.
Euclid Crane & Hoist Co.

TRUCKS—AUTO.
White Co.

TRUCKS, BASKETS, ETC.
Lewis Co., G. B.
Lyon Metallic Mfg. Co.
National Vulcanized Fibre Co.
Smith Mfg. Co.
Standard Fibre Co.

TRUCKS—ELECTRIC—INTER.
Collins, J. D.

TRUCKS—HAND AND ELEVATING.
Collins, J. D.

TRUCKS, INTER, ETC.
Lewis Co., G. B.
Lyon Metallic Mfg. Co.
National Vulcanized Fibre Co.
Standard Fibre Co.

TRUCKS (WELDERS).
Oxweld Acetylene Co.

TUBS.
(See Tanks—Wooden.)

TUBING—METAL.
Dowman-Dozier Mfg. Co.
Youngstown Sheet & Tube Co.

TURBINES—HYDRAULIC.
Allis-Chalmers Mfg. Co.
General Electric Co.
Westinghouse Elec. & Mfg. Co.

TURBINES—STEAM.
Allis-Chalmers Mfg. Co.
American Blower Co.
General Electric Co.
Sturtevant Co., B. F.
Westinghouse Elec. & Mfg. Co.

TURBO UNDERGRATE BLOWERS.
American Blower Co.
Buckeye Blower Co.
Sturtevant Co., B. F.

TWISTING MACHINERY AND SUPPLIES.
Barber Mfg. Co.
Draper Corporation.
Foster Mch. Co.
Howard & Bullough.
Proctor & Schwartz, Inc.
Saco-Lowell Shops.
U S Bobbin & Shuttle Co.
Whitin Machine Works.

TYPEWRITERS.
Smith & Bros. Typewriter Co.

UNIONS—BRONZE.
Crane Co.
Fulton Supply Co.
Jenkins Bros.
Lunkenheimer Co.

URINALS.
Crane Co.
Rundle-Spence Mfg. Co.
Vogel Co., Jos. A.

VACUUM CLEANERS.
Sturtevant Co., B. F.

VACUUM GAUGES.
(See Gauges.)

VACUUM PANS.
Creeson-Morris Co.

VALVES—ANGLE, GLOBE, CROSS, BLOW-OFF, CHECK, GATE, POP-SAFETY, ETC.
Crane Co.
Fulton Supply Co.
Jenkins Bros.
Lunkenheimer Co.

VALVES (BACK PRESSURE).
Crane Co.
Jenkins Bros.
Lunkenheimer Co.
Oxweld Acetylene Co.

VALVES—NON-RETURN STOP.
Crane Co.
Fulton Supply Co.
Jenkins Bros.
Lunkenheimer Co.

VARNISHES.
(See Paints.)

VATS.
(See Tanks—Wooden.)

VENTILATING APPARATUS.
American Blower Co.
Buckeye Blower Co.
Carrier Eng. Corp.
Dowman-Dozier Mfg. Co.
General Electric Co.
Parks-Cramer Co.
Philadelphia Drying Mchy. Co.
Sargent's Sons Co., C. G.
Sturtevant Co., B. F.
Tolhurst Machine Co.
Walker Electric & Plbg. Co.

VENTILATING & HEATING CONTRACTORS.
Dowman, George.
Dowman-Dozier Mfg. Co.
Walker Electric & Plbg. Co.

VENTILATING WINDOW SHADES.
Aeroshade Co.

VILLAGE ARCHITECTS AND DESIGNERS.
Robert & Co.
Sirrine, J. E.
Stunrman, Edw. A.

VILLAGE HOUSES.
(See Houses—Ready Built.)

VOLTMETERS AND AMMETERS.
Bristol Co.
Westinghouse Elec. & Mfg. Co.

WAGON AND CAR UNLOADERS.
Curtis Pneumatic Mchry. Co.

WALLBOARD.
Richardson Co.

WAREHOUSE—PORTABLE.
(See Buildings.)

WAREHOUSE DOOR HARDWARE.
(See Doors and Hardware.)

WAREHOUSE TRUCKS.
(See Trucks.)

WARP DRAWING MACHINE.
Barber-Colman Co.
Crompton & Knowles Loom Works.

WATT METERS.
(See Voltmeters.)

WARPERS AND WARPING MACHINERY AND SUPPLIES.
Auto Creel Corp.
Barber-Colman Co.
Brandwood, John.
Cocker Mch. & Fdry. Co.
Draper Corporation.
Foster Mch. Co.
Howard & Bullough.
Mill Devices Co
Proctor & Schwartz, Inc.
Saco-Lowell Shops.
Suter, Alfred.
U S Bobbin & Shuttle Co.

WASH BASINS.
(See Lavatories.)

WASHERS—CLOTH.
American Laundry Mchry. Co.
Butterworth & Sons Co., H. W.
Hunt Machine Co., Rodney.
Klauder-Weldon Dyeing Mch. Co.
Philadelphia Drying Mchry. Co.
Textile Finishing Mchry. Co.
Tolhurst Mch. Wks.

WASHING POWDERS—FLOOR.
India Alkali Works.

WASTE BINS—STEEL.
Lupton's Sons Co., David.
Lyon Metallic Mfg. Co.

WASTE MACHINERY—COTTON.
Howard & Bullough.
Logemann Bros.
Proctor & Schwartz, Inc.
Rex Eng. Corp.
Saco-Lowell Shops.
Sargent's Sons Corp., C. G.
Schofield Co., Wm.
Whitin Machine Co.

WASTE SEPARATORS.
(See Separators.)

WATCHES (TIME & STOP.)
Silberberg Co., Mortimer J.

WATCHMAN CLOCKS.
(See Clocks—Watchman.)

WATER COOLERS—FOUNTAIN.
Crane Co.
Manufacturing Equip. & Eng'g Co.
Rundle-Spence Mfg. Co.
Taylor, Halsey W.

WATER SOFTENERS AND PURIFIERS.
American Water Softener Co.
Norwood Engineering Co.
Scaife & Sons Co., Wm. B.

WATER SUPPLY SYSTEMS.
Sydnor Pump & Well Co., Inc.

WATER TOWERS.
(See Tanks—Elevated.)

WATERPROOFING MACHINERY.
Butterworth & Sons Co., H. W.
Textile Finishing Machinery Co., The.

WEAVING.
(See Yarn Manufacturers.)

WELDING APPARATUS—ELECTRIC ARC.
General Electric Co.
Westinghouse Elec. & Mfg. Co.

WELDING AND CUTTING APPARATUS AND SUPPLIES—OXY-ACETYLENE.
Fulton Supply Co.
Oxweld Acetylene Co.
Standard Gas Products Co.

WELDING—JOB.
Briggs-Shaffner Co.
Standard Gas Products Co.

WELFARE ARCHITECTS.
(See Village Architects.)

WELFARE EQUIPMENT.
American Laundry Mchry. Co.
Cable Piano Co.
Crane Co.
Conn, Ltd., C. G.
Cutter Works, George.
Dowman-Dozier Mfg Co.
Hill-Standard Co.
Home Canner Co.
Lyon Metallic Mfg. Co.
Manufacturing Equip. & Eng'g Co.
Minter Homes Co.
Rundle-Spence Mfg. Co.
Smith Mfg. Co.
Southern Theatre Equip. Co.
Taylor, Halsey W.
Westinghouse Elec. & Mfg. Co.

WELL DRILLING.
Sydnor Pump & Well Co., Inc.

WHEELS—FIBRE.
(See Fibre Products.)

WHEEL PULLER.
General Electric Co.

WHISTLES—STEAM AND AIR.
Crane Co.
Fulton Supply Co.
Jenkins Bros.
Lunkenheimer Co.

WHIZZERS.
Fletcher Works.
Tolhurst Mach. Wks.
Schaum & Uhlinger.

WINDERS.
Firsching, J. A.
Foster Mch. Co.
Howard & Bullough American Machine Co.
Saco-Lowell Shops.
Universal Winding Co.

WINDOW FRAMES AND SASH—STEEL.
Bogart & Carlough.
Dowman, George.
Dowman-Dozier Mfg. Co.
Knapp Fence Co.
Lupton's Sons Co., David.
Truscon Steel Co.

WINDOW SASH OPERATOR.
Callahan Co., T. G.
Dowman, George.

WINDOW SHADES.
Aeroshade Co.

WIRES—DROP.
(See Drop Wires.)

WIRE FENCING, PARTITIONS & MACHINERY GUARDS.
Anchor Post Iron Works.
Cyclone Fence Co.
Dowman, George.
Knapp Fence Co.

WIRE GLASS WINDOWS.
Bogert & Carlough..
Dowman, George.
Dowman-Dozier Mfg. Co.

WIRE HEDDLES.
(See Heddles.)

WIRE (WELDING).
Oxweld Acetylene Co.

WIRING CONDUITS AND FITTINGS.
(See Electric Machinery and Supplies.)

WIRING—ELECTRICAL.
(See Electrical Contractors.)

WOOD.
(See Lumber.)

WOOD BLOCK FLOORING.
Southern Wood Preserving Co.

WOOD BOXES.
(See Packing Cases.)

WOOD PRESERVERS
American Cement Paint Co.
Barrett Co.
Dixon Crucible Co., Jos.
Johnson & Co., Inc., Oliver.
Ware Paint Co.
Wardsworth, Howland & Co., Inc.

WOOD PULLEYS.
(See Pulleys.)

WOOD ROLLS.
Washburn & Sons, L. R.

WOOD TANKS.
(See Tanks.)

WOOLEN MACHINERY.
Butterworth & Sons Co., H. W
Crompton & Knowles Loom Works.
Schofield Co., Wm.
Phila. Drying Machinery Co.
Proctor & Schwartz, Inc.
Sargent's Sons Corp., C. G.
Textile Finishing Mchry. Co.
Tolhurst Machine Works.
Whitin Machine Works.

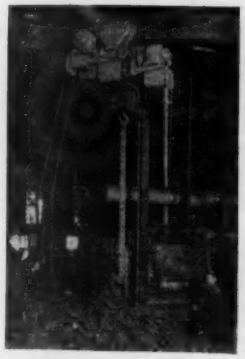
YARN MANUFACTURERS.
Aberfoyle Mfg. Co.
American Yarn & Processing Co.
Boger & Crawford.
Callaway Mills, Inc.
Dixie Mercerizing Co.
Florsheim, H. A.
Hunter Mfg. & Comm. Co.
Philadelphia Felt Co.
Weimar Bros.

YARN DEALERS AND COMMISSION MERCHANTS.
(See Cotton Yarn and Cloth Commission Merchants and Dealers.)

YARN DRYERS.
(See Dryers.)

YARN DYERS.
(See Dyers.)

YARN TESTERS.
Scott & Co., Henry L.



MORE ECONOMY AND SPEED IN
HANDLING HEAVY MATERIALS

Surprising economies can be effected in a textile mill by the use of hoists. The slight difference in first cost is negligible compared with the saving over the time-wasting, strong-arm, antiquated methods of handling.

A Euclid Electric Hoist does more work than ten men with a chain block, and is more efficient and dependable than any other type of hoist. They are made in styles and sizes for every requirement.

EUCLID CRANE & HOIST CO.
EUCLID, OHIO

EUCLID
CRANES and HOISTS

Elevated Tanks
Boilers, Engines
Castings
Hosiery Dye
Machines

R. D. Cole Mfg. Co.
Newnan, Ga.

A Complete Musical Merchandising Service

FEW cities, regardless of size, enjoy a musical merchandising service such as this great store provides. Every known form of musical instrument and musical accessory is here for use in Community Welfare Work.

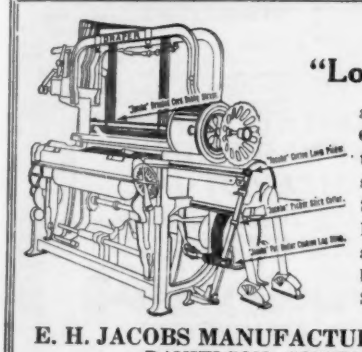
The Euphona Reproducing Inner-Player Piano is especially adapted for use in Recreation Rooms, Assembly Halls, Rest Rooms, etc. It can be played with electricity—as a foot-operated player piano or as an ordinary piano.

CABLE
Piano Company
82-84 N. BROAD ST. ATLANTA, GA.

Liquid EBG Chlorine

Our container equipment includes 100 and 150 pound Cylinders, Ton Drums, and Tank Cars.

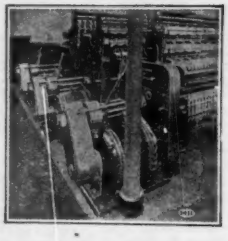
Electro Bleaching Gas Co.
PIONEER MANUFACTURERS of LIQUID CHLORINE
Plant: NIAGARA FALLS, N.Y.
Main Office 18 E. 41st St. New York *Chicago Office* 105 W. Monroe St



Our "Loom Supplies"

are used by Draper Corporation, Crompton & Knowles, Mason Machine Works, Stafford Company, Hopedale Mfg. Co., and carried in stock by all the largest Supply Houses.

E. H. JACOBS MANUFACTURING COMPANY
DANIELSON, CONNECTICUT

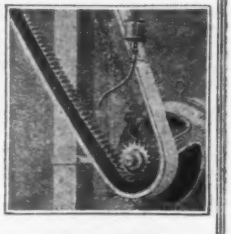


RENOLD CHAINS

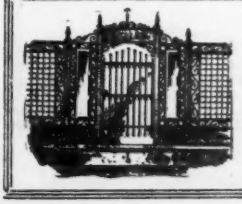
For Power Transmission

Montreal HANS RENOLD INC., *Toronto*

365 Broadway, N. Y.



ADVERTISING is an economy and cuts the cost of selling, making lower prices on better goods possible without sacrifice of the sellers' profits.



WIRE RAILINGS
WINDOW GUARDS
WIRE CLOTH
Established 1835.
DUFUR & CO.
309 N. Howard St. Baltimore, Md.

Advertisers' Index

Aberfoyle Mfg. Co. 808
Aeroshade Co. 261
Alabama Power Co. 23
Aldrich Machine Works 268
Allis-Chalmers Mfg. Co. 267
American Blower Co. 262
American Cement Paint Co. ..262
American Industries Eng'g Co. *
American Laundry Machinery Co. 238
American Machine Co., H. & B. 761
American Moistening Co. .... *
American Scrubbing Equipment Sales Co. 249
American Supply Co. 248
American Textile Banding Co..258
American Water Softener Co..293
American Yarn & Processing Co. 273
Anchor Post Iron Works 772
Arnold, Hoffman & Co. 243
Atlanta Brush Co. 246
Atlanta Harness & Reed Mfg. Co. 287
Atlanta Rubber Stamp & Stencil Works 275
Auto Creel Corp. 250

Bahan Textile Mch. Co. 782
Barber-Colman Co. ...15 and 297
Barber Mfg. Co. 293
Barrett Co. 759
Beer Co., H. & B. 277
Birmingham Slag Co. 263
Bogert & Carlough 28
Boger & Crawford 276
Bond & Co., Chas. 780
Borne, Scrymser Co. 243
Bosson & Lane 242
Bradley Mfg. Co., A. J. 784
Briggs-Schaffner Co. 289
Brinton Co., H. 800
Bristol Co. 271
Buckeye Blower Co. 48
Butterworth & Sons Co., H. W. 41

Cable Piano Co. 295
Callahan, T. J. 28
Callaway Mills, Inc. 277
Carlyle-Johnson Machine Co..268
Carrier Engineering Corp. 295
Carter Electric Co. 266
Carver-Beaver Yarn Co. 275
Casey-Hedges Co. 274
Central Dyestuff & Chemical Co. 792
Chisholm-Moore Mfg. Co. 273
Ciba Co., Inc. 244
Clipper Belt Lacer Co. 269
Cocker Mch. & Fdry. Co..... *
Cole Mfg. Co., R. D. 295
Collins, J. D. 291
Conn, Ltd., C. G. ..... *
Cooledge & Sons, F. J. 265
Cooper Hewitt Electric Co.... *
Corn Products Refining Co.... 42
Cortright Metal Roofing Co. ..285
Crane Co. ..... *
Cresson-Morris Co. 268
Crompton & Knowles Loom Works 251
Curtis Co., The 291
Curtis Pneumatic Machinery Co. 273
Cutter Works, George ..... *
Cyclone Fence Co. 266

Davis, Roger W. 247
Detroit Belt Lacer Co. 270
Detroit Graphite Co. ..... *
DeVilbiss Mfg. Co. 237
Dixie Mercerizing Co. 808
Dixon Crucible Co., Jos. 784
Dixie Seal & Stamp Co. 297
Dodge Mfg. Co. 39
Dowman-Dozier Mfg. Co. 792
Dowman, George .....28 and 29
Draper Corporation 3
Dryer Corp. of America 240
Dufur & Co. 295
Durant Mfg. Co. 792

Eclipse Textile Devices 246
Economy Baler Co. 287
Electro Bleaching Gas Co. 295
Emmons Loom Harness Co. ...289
Ernst & Ernst 770
Euclid Crane & Hoist Co. 295

Fafnir Bearing Co. 6
Fawcett, Hughes 278
Firsching Co., J. A. 784
Fletcher Works 241
Florsheim, H. A. 275
Ford Co., J. B. 242
Foster Machine Co. ..... *
Foxboro Co., Inc., The 43
Franklin Process Co. 2
Fulton Supply Co. 291

Gaillaudet Aircraft Corp. 287
Garland Mfg. Co. 784
General Electric Co.....12 and 13
General Machine Works 802
Georgia Railway & Power Co... *
Godfrey Conveyor Co. 270
Goulds Mfg. Co. 293
Grasselli Chemical Co. 245
Graton & Knight Mfg. Co., The 269
Greist Mfg. Co. 256

Hayes Loom Reed & Harness Co. 258
Hemphill Co. 798
Hill Standard Co. 17
Hockaday Co. 19
Home Canner Mfg. Co. 259
Hopedale Mfg. Co. 253
Hotel Madison Square 281
Hotel Martinique 276
Hotel Tuller 293
Howard & Bullough Amer. Machine Co. 761
Hunt Machine Co., Rodney ... *
Hunter Mfg. & Comm. Co. ... *
Huntington & Guerry, Inc.....267
Hyatt Roller Bearing Co. 35 and 38

India Alkali Works 245
International Eng'g Works...299
Ivanhoe-Regent Works of G. E. Co. 265

Jacobs Co., E. H. 295
Jacobs & Co. 279
Jamieson Co., J. B. 277
Jenkins Bros. 274
Johnson & Co., Oliver 26
Jordan Mfg. Co. 784

Kali Mfg. Co. 44
Keever Starch Co. 240
Kenilworth Inn 22
Klauder-Weldon Dyeing Mach. Co. 238
Knapp Fence Co. 782

La Frentz & Co., F. W. 278
Lane & Co., J. H. 277
Lennig & Co., Chas. 242
Lestershire Spool & Mfg. Co..255
Lewis Co., G. B. 257
Link-Belt Co. 300
Lockwood, Greene & Co. 25
Logemann Bros. 297
Lombard Fdry. & Mach. Wks..287
Lowell Crayon Co. 258
Lunkenheimer Co. 272
Lupton's Sons Co., David 285
Lyon Metallic Mfg. Co. 261

Macomb Machine Co. 239
Manufacturing Equip. & Eng'g Co. 259
Maryland Metal Building Co... 29
Mathieson Alkali Works, Inc... 45
Merrow Machine Co. 802
Metz & Co., H. A. 776
Mill Devices Co. 254
Minter Homes Co. 16
Mitchell-Bissell Co. ..... *
Monroe Calculating Machine Co. ..... *
Morehead Mfg. Co. 272
Morse Chain Co. 34
Mossberg Pressed Steel Corp...252
Murphy's Sons, C. P. 262
Murray Company, The 14

Nashville Industrial Corporation 283
National Aniline & Chemical Co. 1
National Paving Brick Manufacturers Assn. 24
National Vulcanized Fibre Co..780
New Brunswick Chemical Co...789
New York & New Jersey Lubricant Co. 270
Norwood Engineering Co. 238

Oxweld Acetylene Co. 774

Palmer Co., I. E. 258
Panton, Harrison D. 291
Parker Co., Walter L. 254
Parks-Cramer Co. 10
Pearson, Jos. T. 802
Penock & Ford Co., Ltd. 243
Perry-Mann Electric Co. 266
Phila. Drying Machinery Co...238
Proctor & Schwartz, Inc. 9
Prudential Insurance Co. of America 763

Quaker City Rubber Co. 244

Re-Fil-It Broom Mfg. Co. 249
Reliance Machine Works 802
Renold, Inc., Hans 295
Rex Engineering Corp. 253
Rhoads & Sons, J. E. ..... *
Robert & Co. ..... *
Richardson Co. 33
Roessler & Hasslacher Chemical Co. .....786 and 790
Rohm & Haas Co. 242
Root Co., The 782
Ross-Gould Co. 260
Roy & Sons Co., B. S. 297
Rundle-Spence Mfg. Co. 259

Saco-Lowell Shops 247
St. Louis Surfacer & Paint Co. .....31 and 32
Sandox Chemical Co. 237
Sanymetal Products Co. 778
Sargent's Sons Corp., C. G. ..239
Scaife & Sons, Wm. B. 287
Schaum & Uhlinger 241
Schofield's Sons Co., J. S. ...272
Schofield Co., Wm. 287
Scott & Co., Henry L. 252
Scott & Williams, Inc. 795
Seawell, Luke 291
Showalter Printing Co., A. J...260
Silberberg Co., Mortimer J....254
Sirrine Co., J. E. 27
Skayef Ball Bearing Co. 5
Smith Mfg. Co. 257
Smith & Bros. Typewriter Co., L. C. 260
Sonneborn Sons, Inc., L. 297
Southern Cypress Mfg. Asso..263
Southern Electric Supply Co...291
Southern Spindle & Flyer Co..252
Southern Theatre Equip. Co... 18
Southern Wood Preserving Co.778
Southwestern Broom Mfg. Co..248
Stafford Co. 4
Staley Mfg. Co., A. E. 241
Standard Electric Co. 291
Standard Fibre Co. 285
Standard Gas Products Co. ..285
Steel Heddle Mfg. Co. 770
Stein, Hall & Co. 46
Stowe, Jr., Geo. M. 780
Surpass Chemical Co. 237
Sturtevant Co., B. F. 247
Suter, Alfred 250
Sydnor Pump & Well Co. 291

Taylor Co., Halsey W. 257
Taylor Instrument Co. 240
Terrell Machine Co. 763
Texas Co. 36
Textile Finishing Machinery Co.298
Textile Rubber Co. 8
Tennessee Electric Power Co. .....20 and 21
Toledo Scale Co. 259
Tolhurst Machine Works 765
Toomey, Frank, Inc. 282
Torrington Co., The 806
Transmission Ball Bearing Co.271
Trump Bros. Machine Co. 800
Truscon Steel Co. 7

United Chemical Products Co..289
Universal Winding Co. 805
U. S. Ball Bearing Co. 37
U S Bobbin & Shuttle Co.....768
Variety Fire Door Co..... 29
Vermont Spool & Bobbin Co...255
Vogel Co., Jos. A. 260

Wadsworth, Howland & Co., Inc. ..... *
Wagner Mfg. Co. 28
Walker Electric & Plumbing Co. 264
Walsh & Weidner Boiler Co. ..274
Want Ads 282
Ware Paint Co. ..... *
Warren Soap Mfg. Co. 808
Washburn & Son, L. R. 250
Weimar Bros. 275
Westinghouse Electric & Mfg. Co. 11
White Co. ..... *
Whitin Machine Works 248
Whitinsville Spinning Ring Co.256
Wiggins Co., John B. 245
Wildman Mfg. Co. 796
Williams & Sons, I. B. 40
Williams Co., J. H. 251
Wolf & Co., Jacques 244
Wonderlich Co., H. ..... *
Woodward, Baldwin & Co. ...275
Woolford Wood Tank Mfg. Co., G. 287

Youngstown Sheet & Tube Co.264

AMALIE PRODUCTS

"Fair" is not Good Enough for You

Find out how Sonneborn warp dressing helps you to get better weaving

There are many cotton mills today getting "fair" production that would get a good deal more if they heard the whole story of Sonneborn savings from one of our experts.

Amalol and Gluantine, the Sonneborn warp dressing preparations, are the results of years of study and research in our textile laboratories. These products are proving themselves a positive aid to the production of the highest quality weaving—helping to secure a uniform size regain. Daily performance in many prominent New England and Southern mills testifies to this.

There is a mill using Amalol and Gluantine in your vicinity. Write us for its name and the names of many other users of these products. Let one of our experts show you *in your plant* how scientific warp dressing will aid in getting quality weaving. *No obligation. Write.*

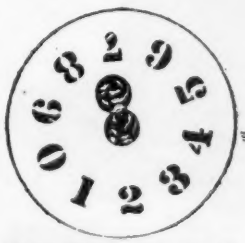
L. SONNEBORN SONS, Inc.
Manufacturing Chemists for the Textile Industry
116 Fifth Ave., N. Y.

AMALOL—for cotton warp dressing—GLUANTINE

L. SONNEBORN SONS, INC., NEW YORK, N.Y.

B V C
TRADE MARK
WARP TYING MACHINES
WARP DRAWING MACHINES
AUTOMATIC SPOOLERS
HIGH SPEED WARPERS
HAND KNOTTERS
BARBER-COLMAN COMPANY
BOSTON, MASS. GREENVILLE, S.C.
MAIN OFFICE AND FACTORY
ROCKFORD, ILL. U.S.A.

GRINDING MACHINERY
for
Cotton and Woolen Cards
Garnets, Napper and Calender Rolls
B. S. ROY & SON CO.
Est. 1868
WORCESTER MASSACHUSETTS
Southern Agent, E. M. TERRYBERRY,
1126 Healey Bldg., Atlanta, Ga.


STENCILS
for any purpose. We make them promptly and properly.
DIXIE SEAL & STAMP CO.
ATLANTA

BALING-PRESSES
FOR ALL PURPOSES
HAND-OPERATED
BELT-DRIVEN ELECTRIC
HYDRAULIC
Both box and open types.
Write for full details.
LOGEMANN BROTHERS COMPANY
MILWAUKEE

MAIN OFFICE AND WORKS
PROVIDENCE, R. I.

NEW YORK OFFICE
HUDSON TERMINAL BLDG.

THE TEXTILE-FINISHING MACHINERY CO

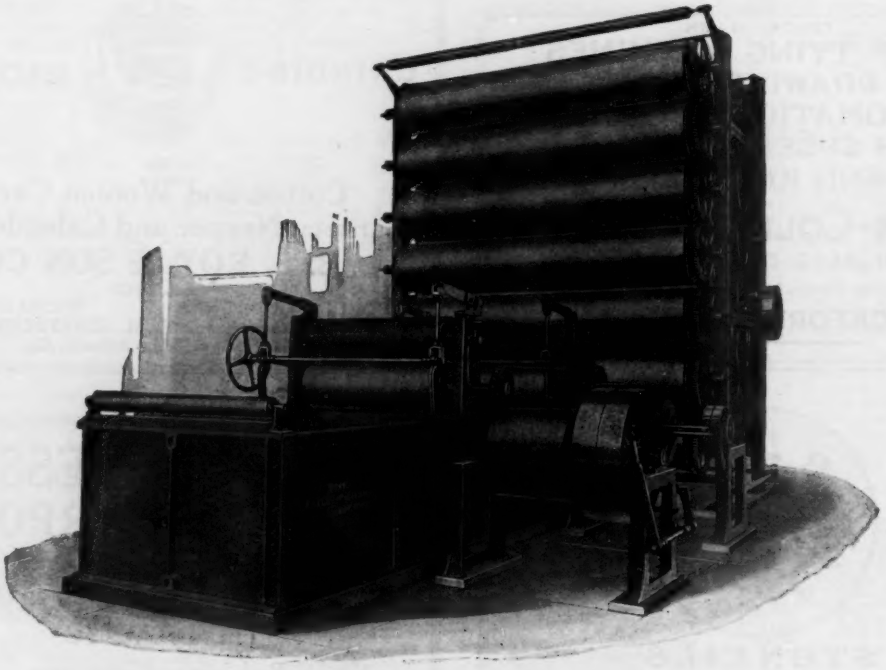
CANADIAN REPRESENTATIVES
WHITEHEAD, EMMANS, LTD.
MONTREAL

SOUTHERN REPRESENTATIVE
H. G. MAYER
CHARLOTTE, N. C.

YOUR INQUIRIES SOLICITED

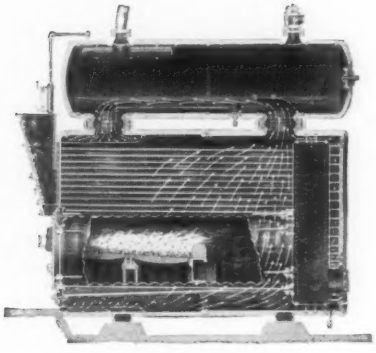
FOR

Machinery for Singeing, Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Textile Fabrics and Warps



Warp Washer and Dryer

More Dry Steam With Less Fuel



HERE'S a perfect Scotch Boiler—a boiler that will generate more steam with less fuel.

Rapid, unrestricted circulation is absolutely necessary to the efficiency of any boiler, and while this feature is claimed for by many boiler manufacturers, the design of this boiler is such that it is positive at all times.

Large overload capacity, dry steam generated, and the remarkable flexibility of meeting fluctuating demands particularly adapts this boiler to severe conditions in industrial mills and plants.

Greatest economy is assured because of the circulating passage, which delivers water from the front neck to the bottom of the shell.

A constant temperature is assured because of this circulation which relieves uneven strains and stresses on this type of boilers.

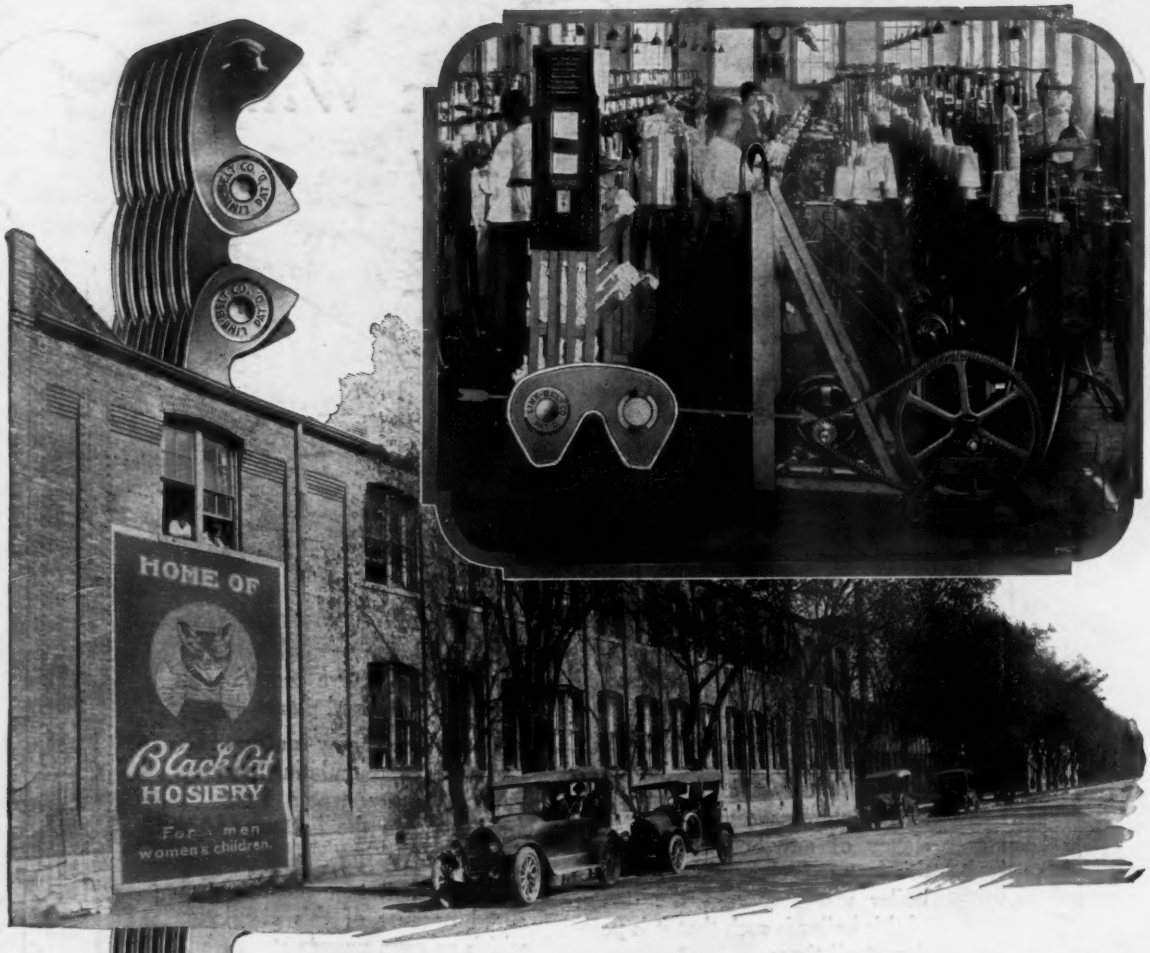
There are no troublesome brick settings, as the boiler is self-contained and is ready for operation upon delivery.

Write today for detail information.

INTERNATIONAL ENGINEERING WORKS, Inc.
FRAMINGHAM, MASS.

Southern Representative, Isaac Hardeman, Charlotte, N. C.

BOSTON **NEW YORK**
PHILADELPHIA **SAN FRANCISCO**



The Allen "A" Company and Link-Belt Silent Chain Drives

WE KNOW of no place where the smooth, uniform application of power is more essential than in the textile industry. That's why you'll find textile mills everywhere dotted with Link-Belt Silent Chain Drives. Jerky application of power as from a slipping belt means broken threads and an inferior product. The smooth, steady "flow" of power through Link-Belt Silent Chain produces a consistently uniform product, eliminates waste and increases the production.

The manufacturers of Black Cat Hosiery were not slow to recognize this fact. Their mills are completely Link-Belt equipped. Not only are they benefiting by an improved product but in the saving of time, power and increased efficiency of their entire working force as well.

Let Link-Belt experienced power transmission engineers help you improve your transmissions.

LINK-BELT COMPANY

PHILADELPHIA, 2045 Hunting Park Ave.
New York - - - Woolworth Bldg.
Boston 9 - - - 49 Federal St.
Pittsburgh - - - 835 Fifth Ave.
St. Louis - Central Nat'l Bank Bldg.
Buffalo - - - 745 Ellicott Square
Wilkes-Barre - 2d Nat'l Bank Bldg.
Canadian Link-Belt Co., Ltd., Toronto and Montreal

CHICAGO, 300 W. Pershing Road
Huntington, W. Va., Robson-Prichard Bldg.
Cleveland - - - - 429 Kirby Bldg.
Detroit - - - - 4210 Woodward Ave.
Kansas City, Mo. 306 Elmhurst Bldg.
Seattle - - - - - 820 First Ave., S.
Portland, Ore. - - - - - 101 First St.
H. W. CALDWELL & SON CO., CHICAGO

INDIANAPOLIS, West Michigan St. & Holmes Ave.
San Francisco - - - - - 168 Second St.
Los Angeles - - - 163 N. Los Angeles St.
Denver, - - - - - - - -
Lindrooth, Shubart & Co., Boston Bldg.
Atlanta, 610-11 Citizens and Southern Bank Bldg.
Louisville, Ky., - - F. Wehle, Starks Bldg.
NEW YORK, Woolworth Bldg

New Orleans - - - - - - -
C. O. Hinz, 504 Carondelet Bldg.
Birmingham, Ala., - - - - -
S. L. Morrow, 720 Brown-Marx Bldg.
Charlotte, N. C., - - - - -
J. S. Cothran, Com'l Bank Bldg.
DALLAS, TEXAS, 709 Main St.

3042

LINK-BELT